MAY '57

MODERN TEXTILES

MAGAZINE

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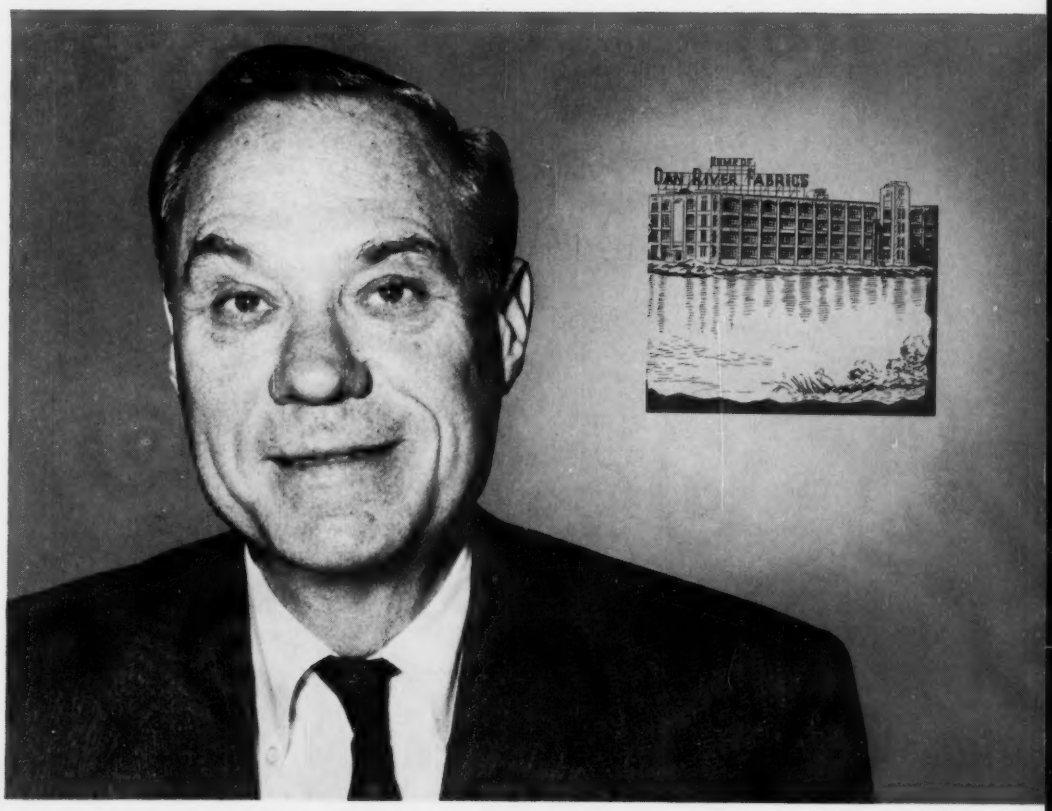


WILLIAM J. ERWIN -- he heads new Dan River — Iselin-Jefferson combination --

Story page 33

THIS MONTH'S SPECIAL FEATURES

New dyes and finishes

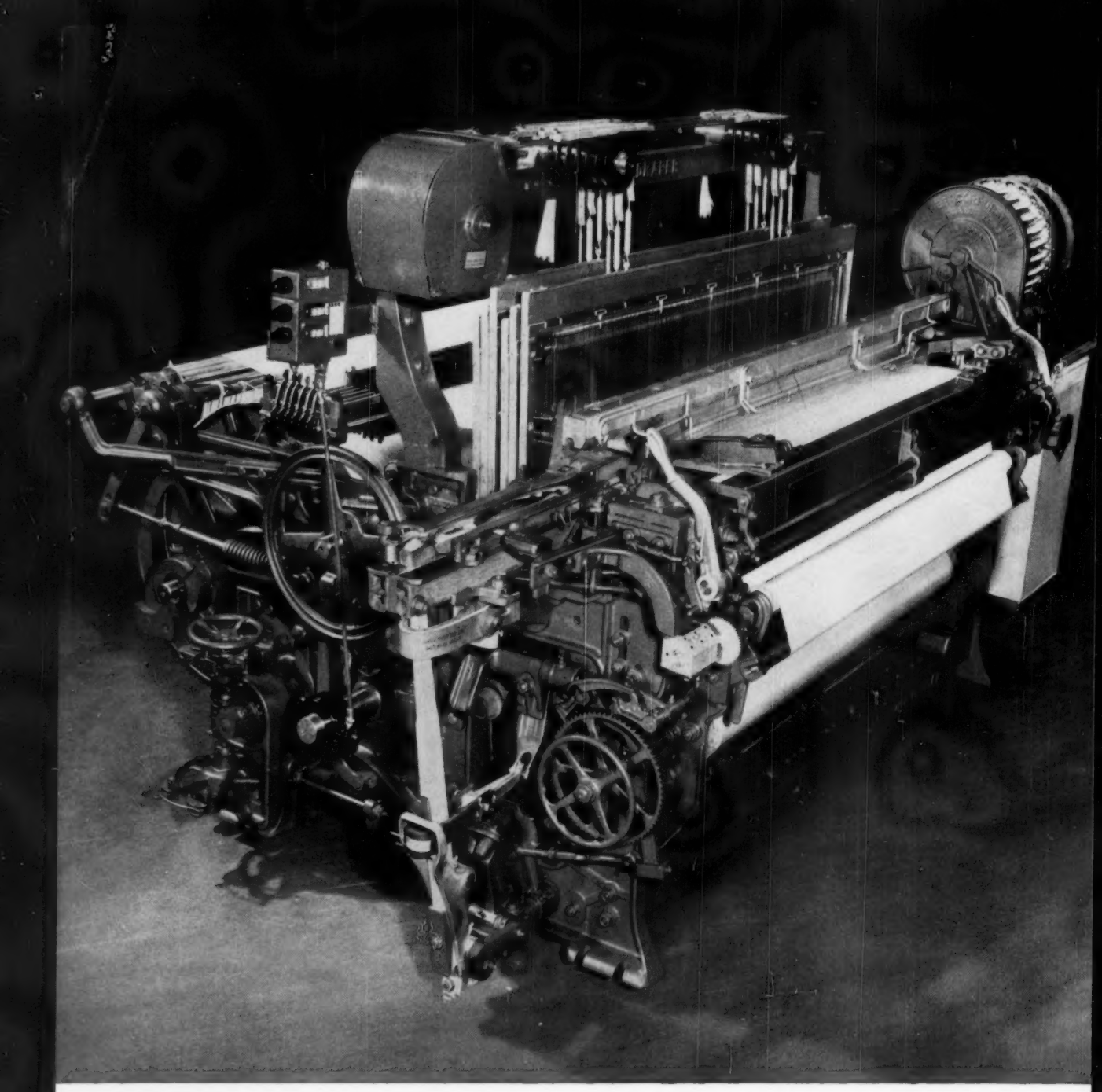
Improved stock blender

Latest trends in knitting

Wear tests of carpet nylon

Improvements in hosiery machines

AND 14 MORE HELPFUL ARTICLES AND TIMELY REPORTS



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Long range flexibility, practical and economical operation, higher production, increased efficiency and a new low in maintenance cost are major benefits offered by the new Draper X-2.

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LOOM PARTS

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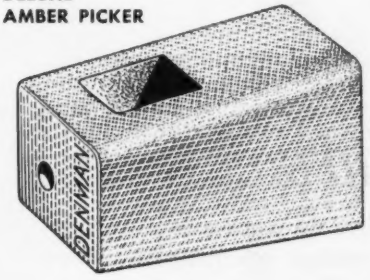
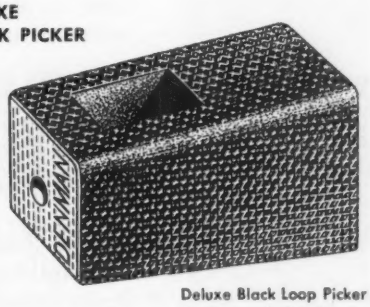
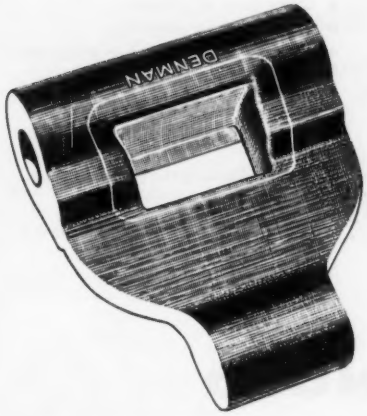


Deluxe Amber Loop Picker molded of specially compounded formula. Light in color to eliminate any yarn discoloration from picker dust.

DELUXE BLACK PICKER



Deluxe Black Loop Picker of Rubber and fabric scientifically molded in one piece for long economical wear.



DELUXE DROP BOX REVERSIBLE PICKER

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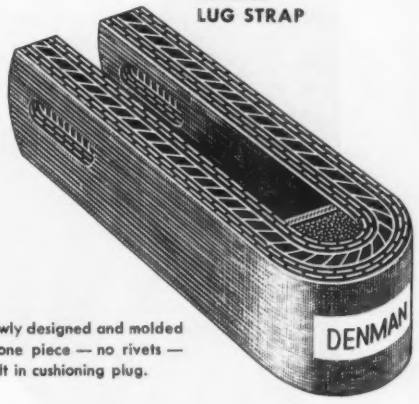

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May, 1957 Vol. 38, No. 5

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Established 1925

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The Principal Trade Groups

Man-Made Fiber Producers Association ..... Empire State Bldg., New York
National Federation of Textiles, Inc. ..... 389 Fifth Ave., New York
American Association of Textile Chemists and Colorists ..... Lowell Techn. Inst., Lowell, Mass.
American Association for Textile Technology, Inc. ..... 100 W. 55th St., New York
Silk and Rayon Printers and Dyers Ass'n of America, Inc. ..... 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers Association ..... 41 E. 42nd St., New York
Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York
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Israeli Rayon Plant

A new $20,000,000 rayon plant in Israel, to be constructed at Hadera on the Mediterranean coast, will be the largest American-financed industry in that country, according to Israel Rogosin, 70-year-old head of Beaunit Mills, Inc.

Rogosin has invested $6,000,000 in the new plant; the Israeli Government has granted the plant an $11,000,000 loan and an additional $3,000,000 will come from private funds.

Rogosin, at a dinner given in his honor at the Waldorf-Astoria Hotel in New York City by the State of Israel, announced that he has donated $4,000,000, consisting of stock in the new Israeli rayon plant, to a group of educational institutions in the United States and Israel.

Curtis & Marble Expands

The textile machinery business of Hermas Machine Co., Hawthorne, N. J., has been acquired by the Curtis & Marble Machine Co., Worcester, Mass. The physical inventory of stocks of materials, including fabricated parts, machines and machinery, will be transferred to Worcester where a new Hermas Division, will be set up by Curtis & Marble. Machinery manufacturing and precision machine shop work for industries other than textiles will be continued by Hermas Machine at its Hawthorne plant.

Nylon Finish for Cottons

Nyloglaze, a method of finishing cotton cloth with a solution derived from nylon flake, is now offered in dresses of wash-and-wear type. Nyloglaze is said to improve tensile strength of the fabric and give it a silkier finish and better wrinkle recovery. This nylon glaze may be applied to either combed broadcloth or 45 inch print cloth of 80 x 84 construction and is placed on top of other resin finishes.

Wool Goods Import Curtailment Sought

The woolen and worsted industry has been suffering from a burden of unfair competition from abroad. According to the New England Wool Manufacturers Council. New England firms are still responsible for over half of the woolen and worsted fabrics produced in the United States, according to the Council. Since tariff cuts ten years ago, the United States' woolen and worsted industry has dwindled to half its former size, and imports have increased 800 to 1200%, the Council stated. The Council has called for "a comprehensive program by the Federal Government to bring about curtailment of woolen and worsted imports."

Kelley Buys Allen Son's

William Allen Son's Co., Worcester, Mass., for the past 80 years manufacturers of Kiers top dyeing machines and special bleaching equipment for the textile industry, has been purchased by O. G. Kelley and Co., Boston, Mass., according to John N. Bready, general manager of the Boston firm. All Allen products, including repair parts formerly manufactured by the Worcester firm, will now be made by Kelley in its Boston plant.

Wool Market Reported "Stable"

"Nothing has happened or is likely to happen that would substantially change the price structure of raw wool," reports Carl T. Erickson, assistant vice president of Commercial Factors Corp. The financing specialist says the wool market is stable, and that limited runs, especially in the field of novelties and specialty fabrics, offer mills the best opportunities today. By May, when most manufacturers start their cuttings for fall, Erickson points out, fabric prices will probably "firm" at present rates.

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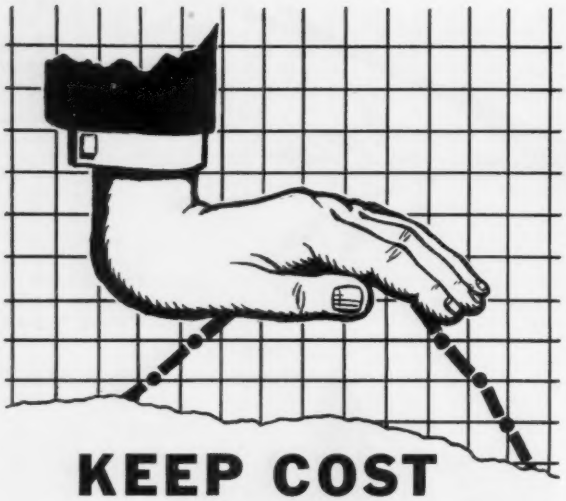

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Plant manager Fred G. Gronemeyer (right) accepts award from Nat'l Safety Council's Roy G. Benson

Chemstrand Safety Record

A new world's safety record for textile plants was set recently by Chemstrand Corp. at its nylon manufacturing plant in Pensacola, Fla. Chemstrand reported that as of 6:01 a.m., March 12, more than 4,800 employees had worked more than 13,624,000 man-hours without a lost-time injury.

The company states that, according to National Safety Council figures, this represents the safest work record among more than 7,000 textile plants in the U. S. The previous record of 13,624,000 hours was set in 1952 by Forstman Woolen Mills, Passaic, N. J.

Hemphill to Relocate

Draper Corp. has announced plans to relocate its subsidiary, Hemphill Co., Pawtucket, R. I., in Norristown, Pa. Hemphill's manufacture of knitting machinery for men's and children's hosiery, will be consolidated with those of another Draper subsidiary located in Norristown, Wildman Jacquard.

Combined manufacturing operations and sales facilities of both subsidiaries are expected to improve service, Draper reports. No definite date has been set for completion of the Hemphill relocation. Draper plans to dispose of all Hemphill real estate and certain machine tools in Rhode Island.

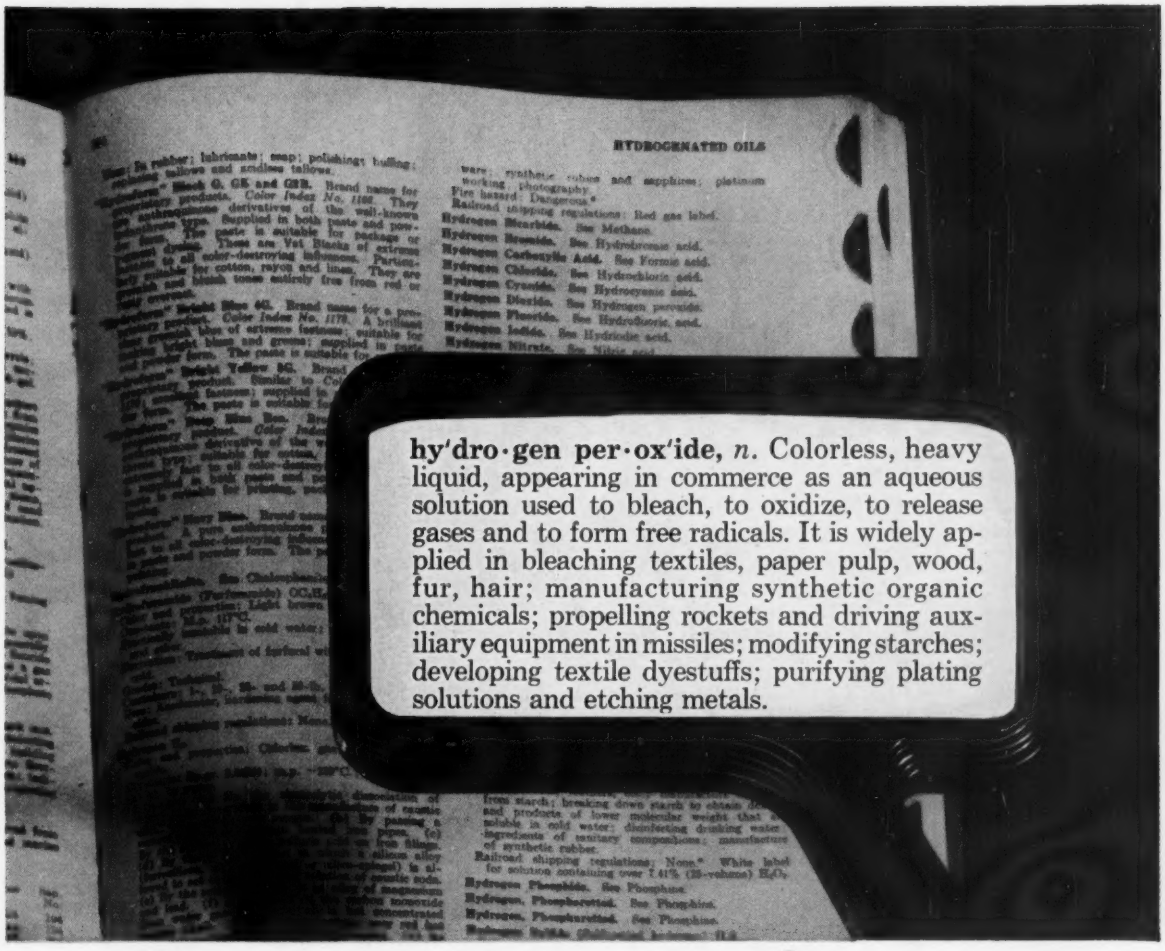
New Saco-Lowell Orders

The executive office of Saco-Lowell Shops, Boston, Mass., announced orders for extensive machinery and equipment have been received from the Huntsville Mfg. Co., Huntsville, Ala., for modernizing the Huntsville firm's No. 2 mill opening and picking departments. Other new Saco-Lowell contracts include:

Equipment to modernize eight No. 7 feeders and four model 5 pickers has been purchased by the opening and picking departments of the Cones Mills' Mineola Plant, Gibsonville, N. C. Nine Saco-Lowell model No. 56 high production combers were sold to Laurens Mills, Laurens, S. C. Sale of 89 18-inch by 42-inch Saco-Lowell card coilers and 32 deliveries of DC-8A high speed Versa-Matic drawing equipment to Strickland Cotton Mills, Valdosta, Ga., and 64 deliveries of Versa-Matic high speed drawing equipment to the Pickett Cotton Mills, High Point, N. C.

Film on Detergent Use

A new color film, "Sandopan DTC," illustrating the application of a crypto-anionic synthetic detergent in the latest type of textile mill dyeing and finishing equipment, has been released by Sandoz, Inc. The movie takes its viewers through a 24-minute tour of six textile mills and the New Bedford School of Textiles pilot plant. A sequence of special interest to textile printers and print fabric converters covers the operation of the latest in automatic Swiss printing equipment.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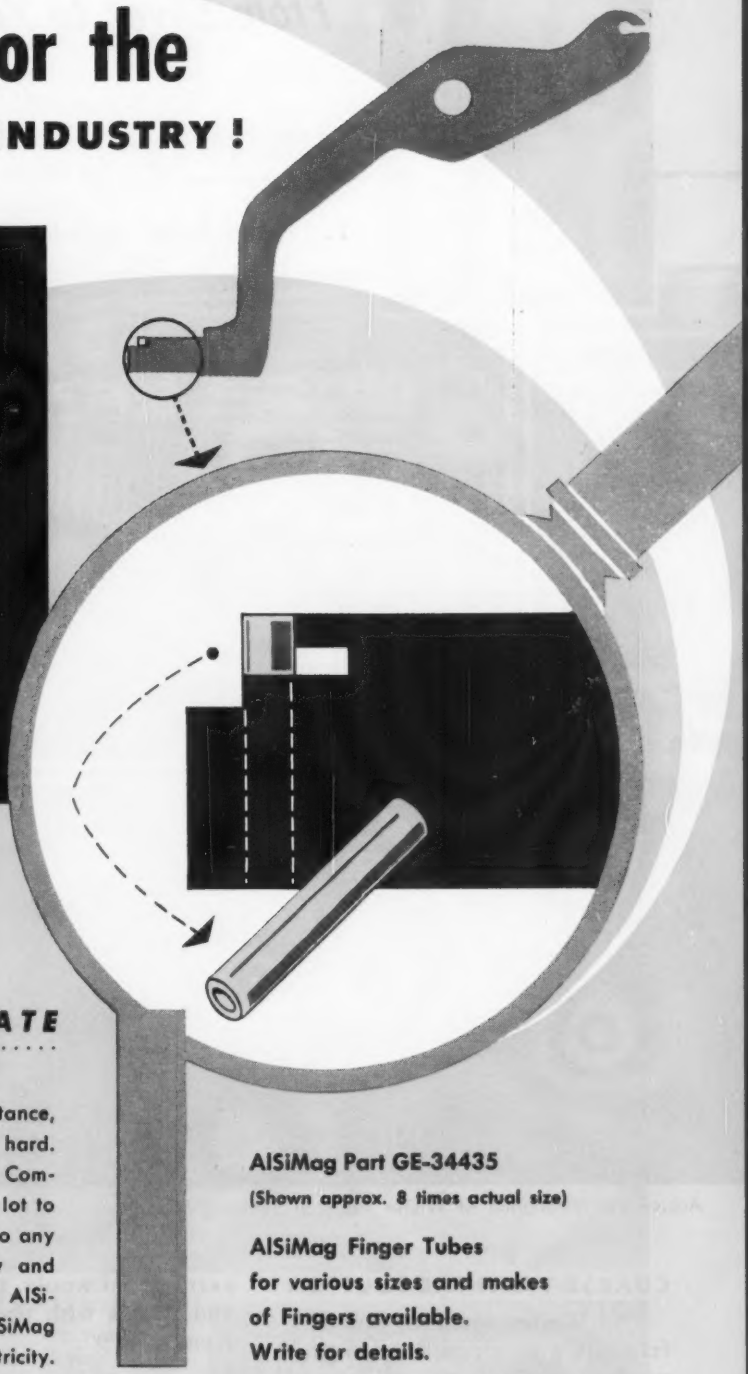

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It is ideally suited to highly economical production of quality tufted carpet and other coarse yarns from wools, synthetics and blends with fiber lengths from 3" to 9".

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- **Draft range 4 — 50**
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- **Spindle speeds up to 5000+ r.p.m.**
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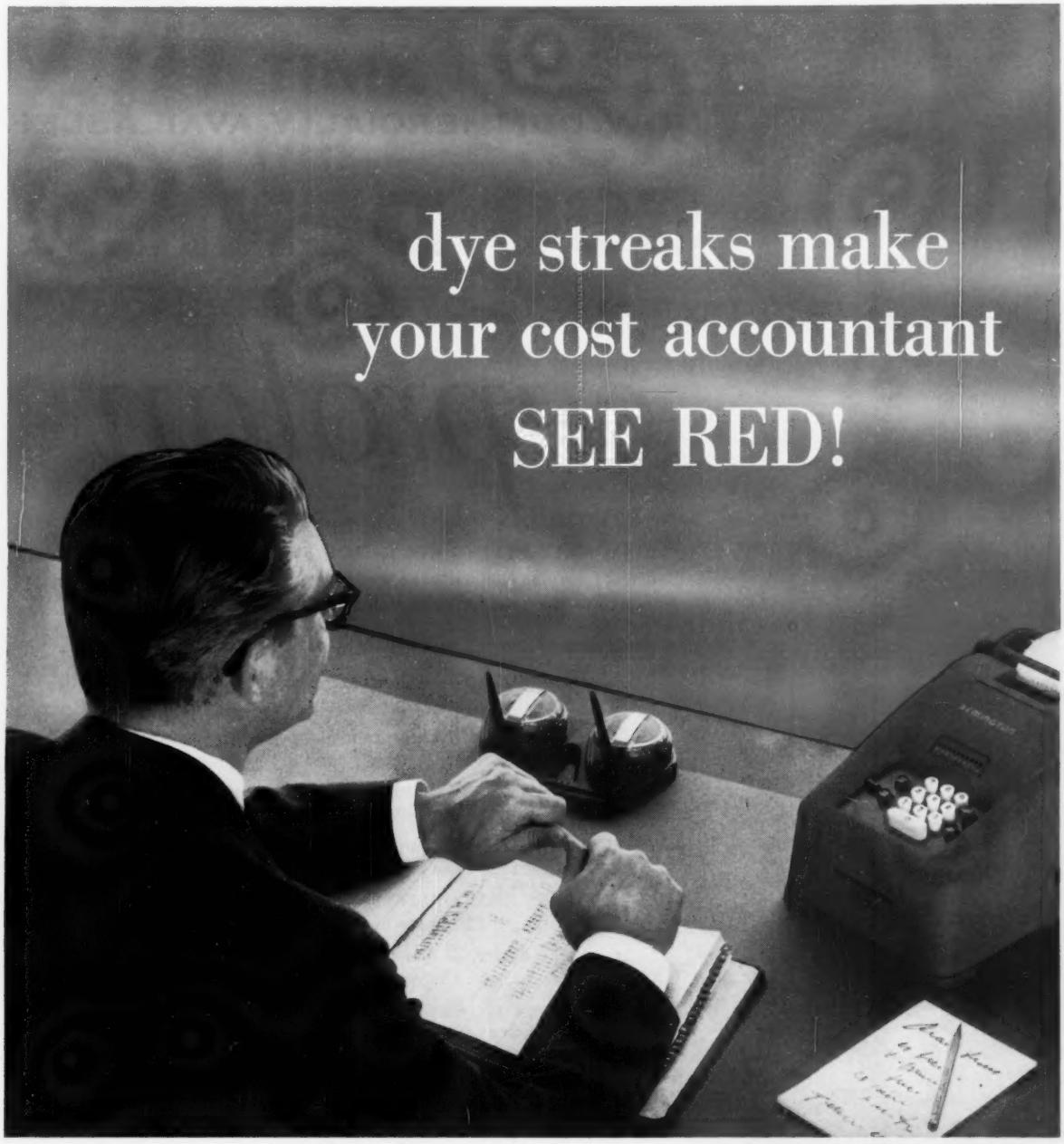

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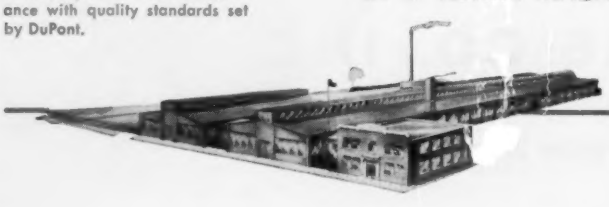


U. S. TEXTILE

designers and manufacturers of
U. S. ACME MODERN THROWING EQUIPMENT

Helpful answers to CAUSTIC QUESTIONS

As a leading producer of Caustic Soda, Columbia-Southern is asked many questions every month about this versatile, widely-used alkali. While the answers probably are not completely new to every Caustic Soda user, they do re-emphasize certain basic points that shouldn't be forgotten. We hope that you will find this series interesting and helpfully informative.

What is the necessary raw material for Caustic Soda?

Plentiful supplies of brine are required for the electrolytic production of Caustic Soda. This process also liberates Chlorine as a co-product. An electric current is passed through a sodium chloride brine solution contained in specially-designed cells. A 10-12% Caustic Soda solution forms at the cell's cathode. This low concentration liquor is evaporated to yield the various concentrations desired.

Is Caustic Soda an element?

No. Caustic Soda is a compound of sodium, hydrogen, and oxygen. It is known chemically as sodium hydroxide, and is commonly called lye.

How much liquid Caustic is now produced?

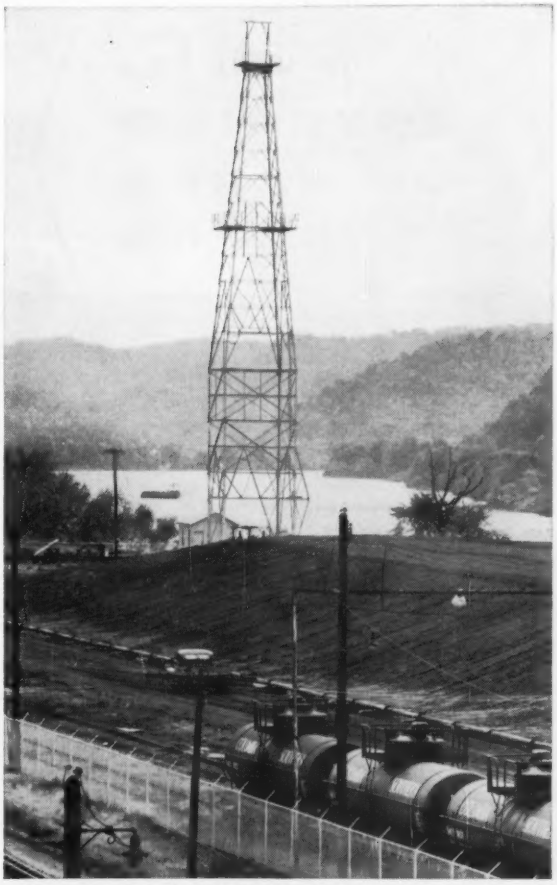
Latest six-month figures for the January-July 1956 period set the production of liquid Caustic at 2,169,368 short tons for electrolytically manufactured, 260,899 short tons for lime-soda process.

What type of pumps are recommended for the transfer of Caustic liquor from tank cars to storage, and from storage to the point of use?

Centrifugal pumps do the job best. All-iron construction with no brass or bronze fittings is generally preferred. For high temperature use, nickel or nickel alloy pumps will give longer service and the liquor will show less metallic contamination.

Who currently uses the most Caustic?

The chemical processing industry itself is by far the largest group user of Caustic, consuming roughly 25% of all production. Rayon and film producers rank second, followed by such large volume consumers as the petroleum refining, pulp and paper, cleaners, soap, textile, metals, vegetable oils, and rubber industries.



SOME OF THE WORLD'S DEEPEST BRINE WELLS, operated by Columbia-Southern to supply the New Martinsville, W.Va., Caustic Soda-Chlorine plant, draw salt brine from depths of a mile and a quarter.

How much water is required to dilute a tank car of 73% Caustic solution to a more easily stored 50% concentration?

About 6,100 gallons of dilution water are needed to bring an 8,000 gallon tank car of 73% down to 50% strength; 7,650 gallons of water to dilute each 10,000 gallon car.

How can each user determine the most economical grade and form of Caustic to buy?

Much, of course, depends upon the user's end product and processing requirements. Solid, standard flake, 50% and 73% solution, all have certain advantages. Processing advances, transportation developments and freight rate changes, however, dictate a periodic review of your purchasing. Columbia-Southern will be happy to look for economies you might well realize . . . at no obligation to you. Call, write or wire our Pittsburgh address for the prompt services of experienced Caustic Soda specialists.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
ONE GATEWAY CENTER · PITTSBURGH 22 · PENNSYLVANIA

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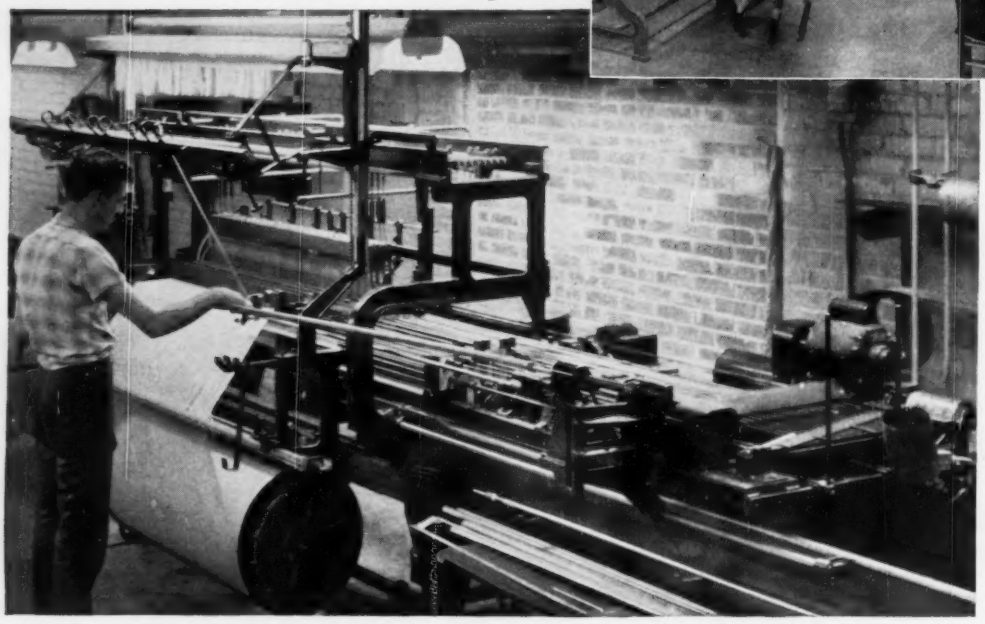
IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

IF YOU ARE
ENTERING
YOUR **WARPS**
LIKE THIS



WE SUGGEST YOU LOOK INTO THE

BARBER-COLMAN
WARP DRAWING MACHINE

With this machine, the time-eating task of drawing-in is speeded up tremendously. A power-driven needle, running at 127 to 230 strokes per minute (depending on the number of weaving elements to be entered), draws each thread in succession through the correct selection of drop wire, heddle, and reed dent. This correct selection is made accurately *and automatically* for each pick by a sequence of mechanical actions controlled by a pattern strip punched in accordance with the designer's draft. Very substantial reductions of drawing-in costs are possible, particularly on patterned goods such as stripes, plaids, and fancy weaves. This *modern method* of replacing warps has enabled many mills, both large and small, to meet the ever-increasing demands for a greater variety of patterns. *Your Barber-Colman representative is qualified to advise you on possibilities in your mill.*

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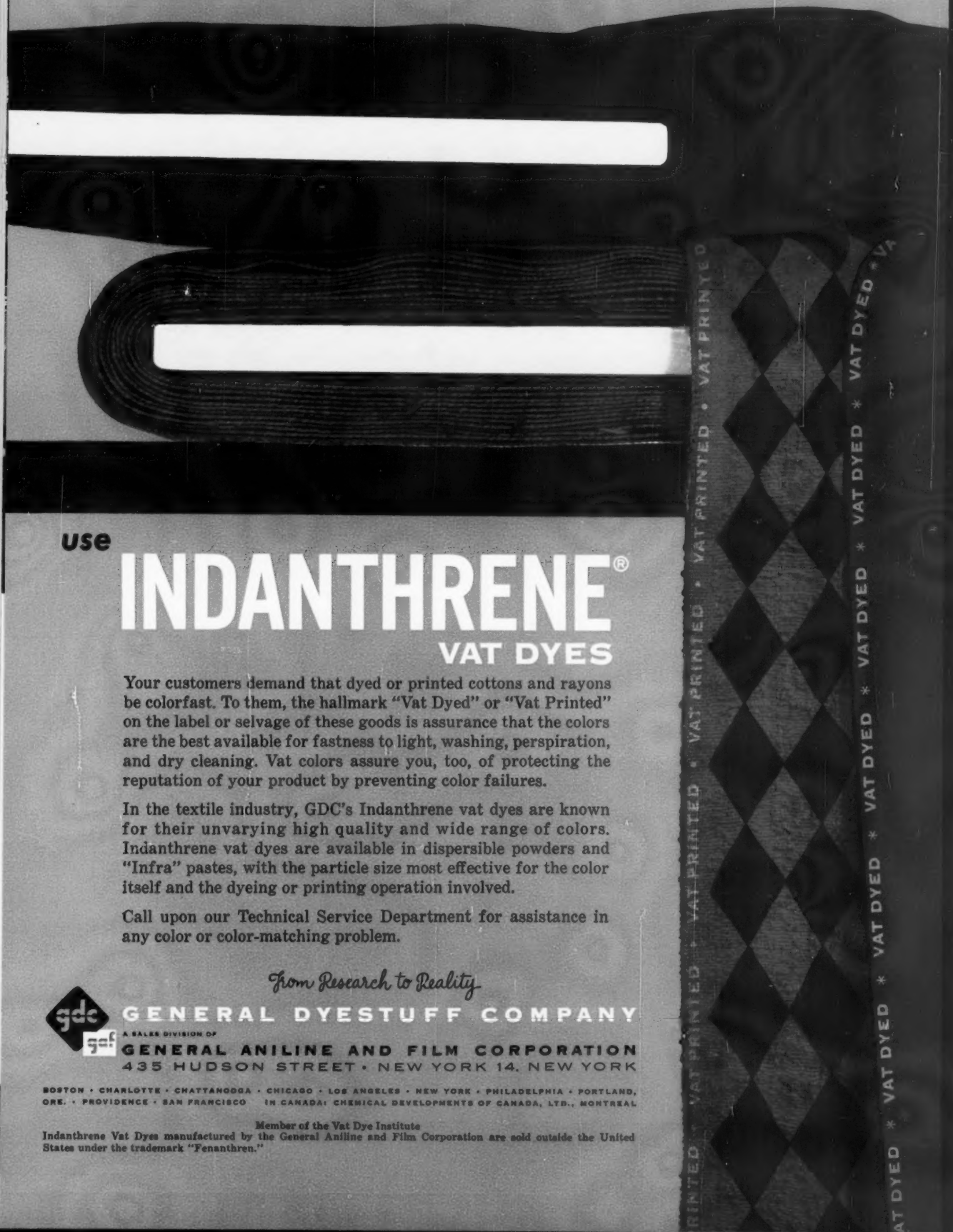
to please "colorfast-conscious" customers



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VAT DYES

Your customers demand that dyed or printed cottons and rayons be colorfast. To them, the hallmark "Vat Dyed" or "Vat Printed" on the label or selvage of these goods is assurance that the colors are the best available for fastness to light, washing, perspiration, and dry cleaning. Vat colors assure you, too, of protecting the reputation of your product by preventing color failures.

In the textile industry, GDC's Indanthrene vat dyes are known for their unvarying high quality and wide range of colors. Indanthrene vat dyes are available in dispersible powders and "Infra" pastes, with the particle size most effective for the color itself and the dyeing or printing operation involved.

Call upon our Technical Service Department for assistance in any color or color-matching problem.

From Research to Reality

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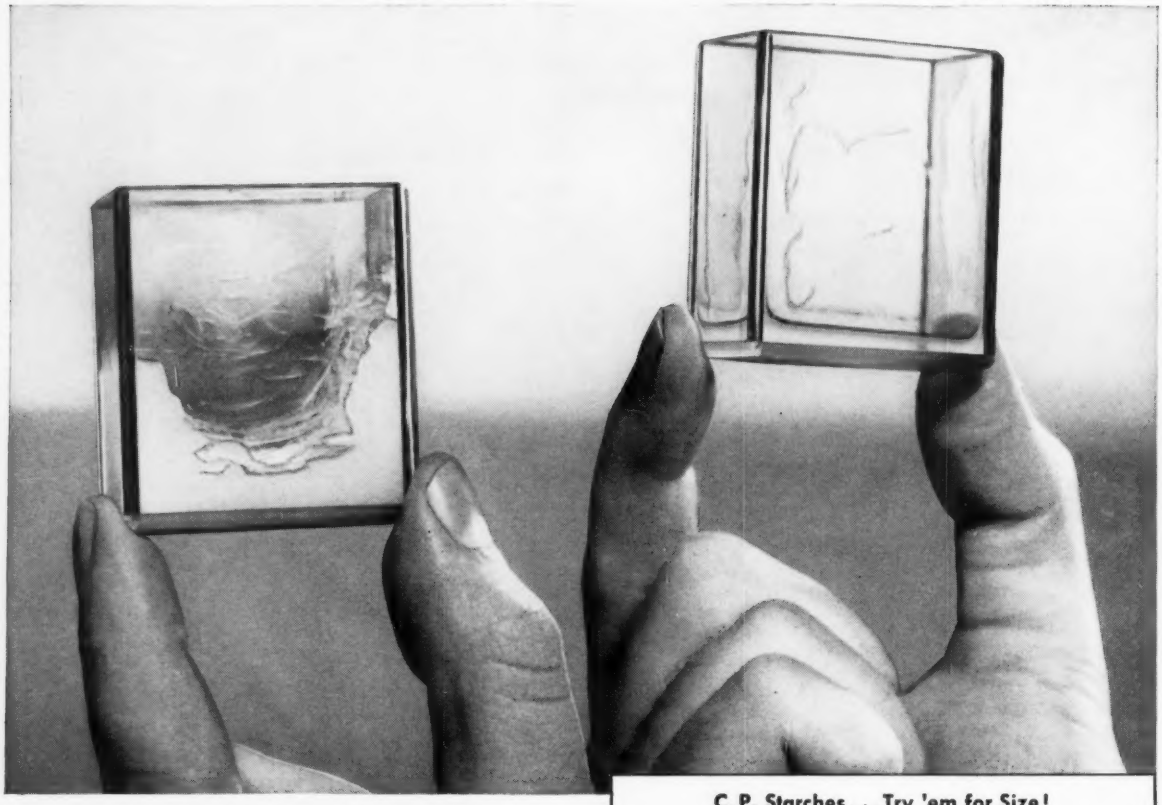
Indanthrene Vat Dyes manufactured by the General Aniline and Film Corporation are sold outside the United States under the trademark "Fenanthren."

C.P. Starches...Try 'em for Size



Lack of build-up of Ten-O-Film starch in size box is demonstrated by these chemical test boxes containing (left) ordinary starch and (right) Ten-O-Film respectively.

Solving Tough Slashing and Finishing Problems

TEN-O-FILM®

Starches

C. P. Starches...Try 'em for Size!

	GLOBE							
	Pearl	Gums	Dextrines	EAGLE	TEN-O-FILM	HERCULES	FLEXIBLE	FOXHEAD
WARP SIZING								
General	*			*				
Synthetics	*	*		*	*	*	*	
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Carded Cotton	*							
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Dyed Yarns					*			
Top Beam Yarns					*			
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FINISHING								
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If you're not already using TEN-O-FILM Starches, it will pay you to investigate the many advantages offered by this new line:

Ready for use 30 minutes after reaching boil... needs less softener or plasticizing compound... size remains stable at slashing temperatures despite prolonged heating and circulating—does not congeal or "skin over" at below-normal temperatures—can be held for reasonable shutdown period without gelation. Film strength, continuity and flexibility promote maximum production, permit lower weave room humidity!

Technical help in utilizing TEN-O-FILM Starches is available without cost or obligation. Ask also about engineering service. Contact your nearest sales office or write direct to:

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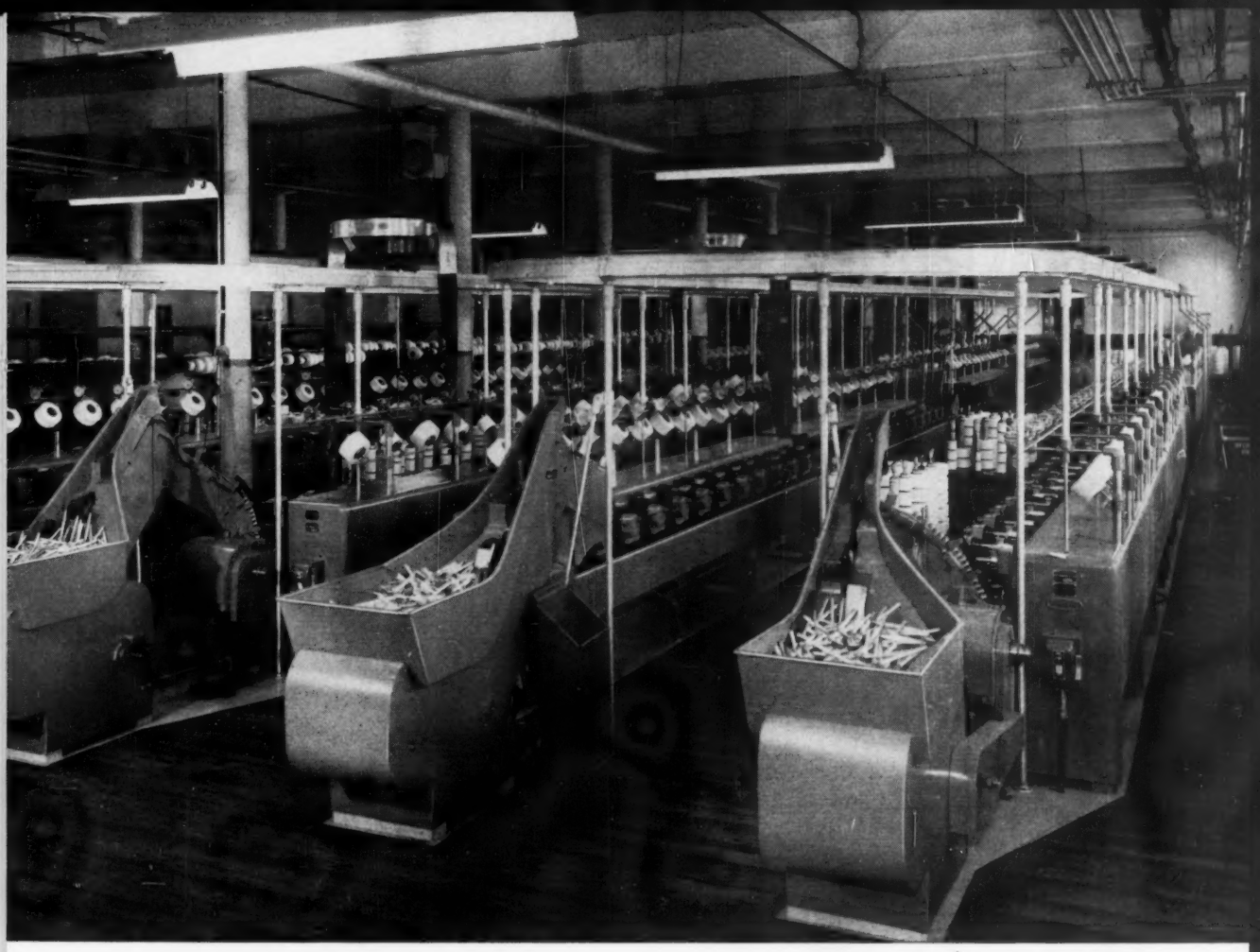
Corn Products makes these famous starches for the Textile Industry:
EAGLE® · FOXHEAD® · GLOBE® · HERCULES · TEN-O-FILM® · GLOBE® Dextrines



SPEED: 12,500 rpm PROBLEMS: none

Quill winding spuns with KIDDE compensators

For 2 years, these winders have operated at 12,500 rpm with the help of new Kidde double disc compensators, specifically designed for use on spuns and natural fiber yarns. At top efficiency, they've turned out the kind of quills that give top loom performance. There are 5 reasons why these Kidde Compensators give such outstanding performance.

1. You get maximum density control with Kidde Compensators, cutting down on quill changes and assuring uniform quill size as well.
2. There is never any build-up of lint because Kidde Compensators are entirely self-cleaning.
3. Tension is automatically maintained at designed strength of yarn.
4. Kidde Compensators assure absolutely uniform quill diameters.
5. Positive tension control is maintained without any abrasion.

Can you afford to do without these "constant watchmen" over your winding process?

For full information, write to:

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The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Some Plain Facts About Drawing Equipment

The value of drawing equipment is based on three things—production per unit, sliver quality, and operating cost. We claim, and can prove, that Ideal High Speed Ball Bearing Drawing* excels in all three.

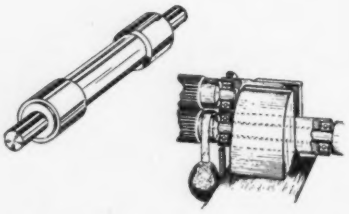
Production

This depends on consistent operating speed. Ideal Drawing will run smoothly and safely at speeds in excess of 350 feet per minute. The exclusive features which make this possible are as superior to ordinary drawing—old or new—as a jet engine is to the propellor type.

A Typical Ideal Installation

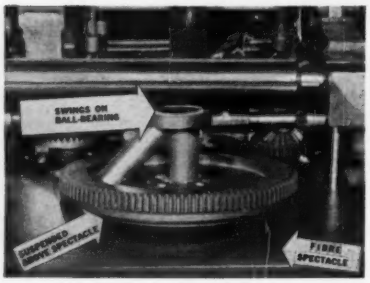
Sliver Quality

Ideal's new principle automatically evens out thick and thin places in the roving, and prevents bruising or cutting of stock. Ideal's exclusive Flute construction imparts a permanent, strength increasing crimp to the stock. Hundreds of strength and evenness testers are daily recording the superiority of Ideal sliver.



Ideal Spacing Section

This is one of the several valuable features found only on Ideal Drawing. These patented ball bearing spacing sections carry *all* of the weight of the rolls . . . transmit *no* resistance . . . and hence never wear to throw the rolls out of alignment. They deliver Ideal Feather-touch Drafting, at high speeds, month after month . . . *year after year . . . with practically no maintenance or adjustments.*



Can be installed on your present frames or furnished on New Ideal Frames

Ideal Coiler Tube Mechanism

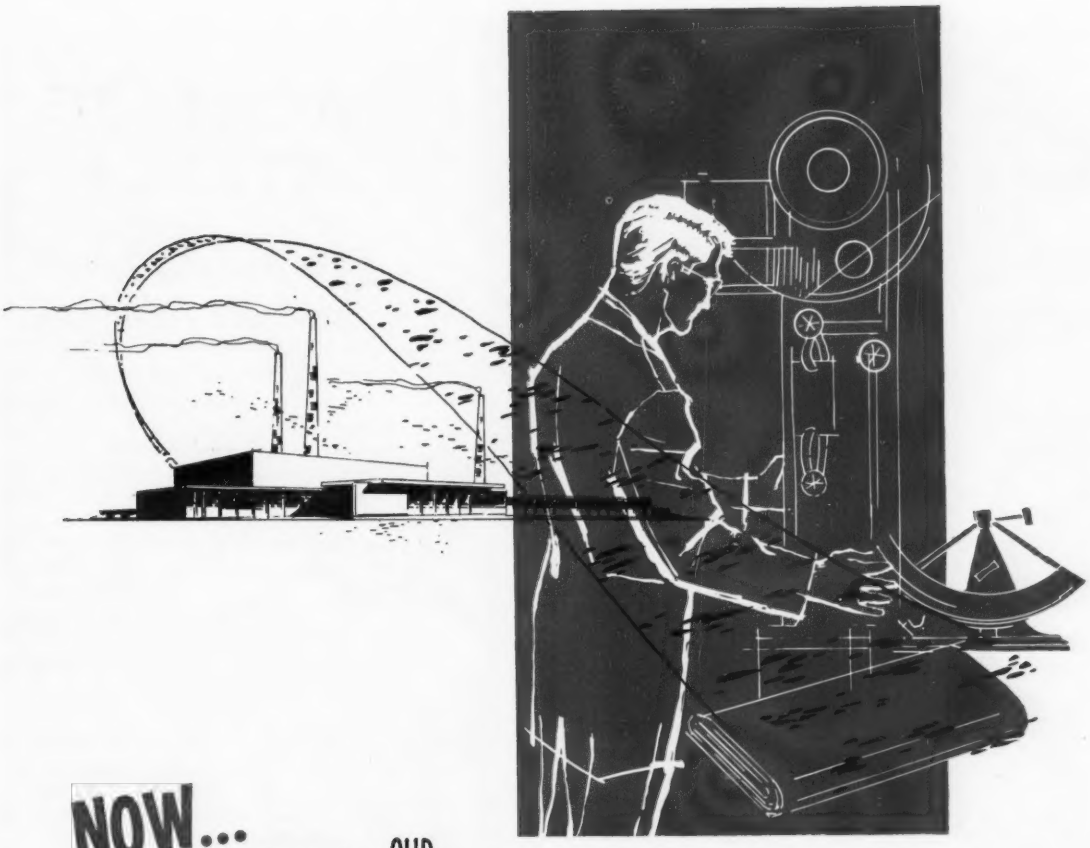
The Coiler Tube Mechanism shown below, swings freely *above* the spectacle at high speed. Requires no oil or grease and puts more sliver in each can.

Economy

It costs you less to equip your mill with Ideal Drawing. It costs less in operating labor. Work stoppages for cleaning or reconditioning are practically nil. And one 3 HP motor drives 16 deliveries. Ideal Drawing is **millions** of pounds beyond the experimental stage and is giving supreme satisfaction in hundreds of mills. We'll be glad to give you the names of nearby users. It will pay you to write for full information on Ideal before you buy.

*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

Ideal Industries, Inc.
Bessemer City, N. C.



NOW...

not only OUR products, but also our CUSTOMERS products are LABORATORY TESTED

The finishing plant without specific facilities for testing resin-treated fabrics can now maintain quality and be assured of meeting specifications.

Samples for all lots finished with our line of thermo-setting resins may be sent to our TEXTILE TESTING DIVISION. Complete test reports will be furnished promptly to the mill, together with suggestions for any necessary improvement in quality.

This is just another facet of our CUSTOMER SERVICE PROGRAM, available to all formulators of crease-resistant, "wash-wear", schreinered, embossed, and glazed finishes.

Send for samples of our resins together with mill-tested finishing formulae, and let us send you a sample report on your test runs.

HARTOSET E—A highly stable and efficient monomeric etherified urea resin, giving excellent stabilization and soft hand.

HARTOSET P—A stable polymeric etherified urea resin for stabilization with crisp hand.

HARTORESIN T—An acetylene-diurein resin for soft, stabilized finishes on rayon.

HARTORESIN S50—A stabilized, high-solids urea-formaldehyde syrup.

HARTOSET F60—A crisp, flame-retardant finish for nylon nets.

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the Hart Products Corporation

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ACETATE STAPLE

puts selling power in soft fabrics

It started in Paris and it is amazingly strong!

The soft look in suitings is the big trend for a long time to come. This is the time for acetate. Acetate staple combined with rayon makes possible the soft, supple hand and intrigue of the most expensive fabrics at volume prices.

Acetate upgrades styling—delivering the most varied effects in both reserve and cross dyeing.

Acetate is the key to soft and pliable fabrics that drape gracefully.

Extensive design and production work highlight the advantages of 50% or more acetate in the blend. The reasons are clear:

1. As acetate is increased, resistance to wrinkles is improved.
2. Crease and pleat retention improves markedly as the percentage of acetate is increased.
3. Quantity of resin finish can be diminished as acetate in the blend is increased.

Soft look volume hinges on acetate. The time to plan ahead is now—for those in on the ground floor will profit most. Celanese is ready to tell you what has been done and can be done with the new thinking in acetate. Celanese Corporation of America, Textile Division, Charlotte, North Carolina.

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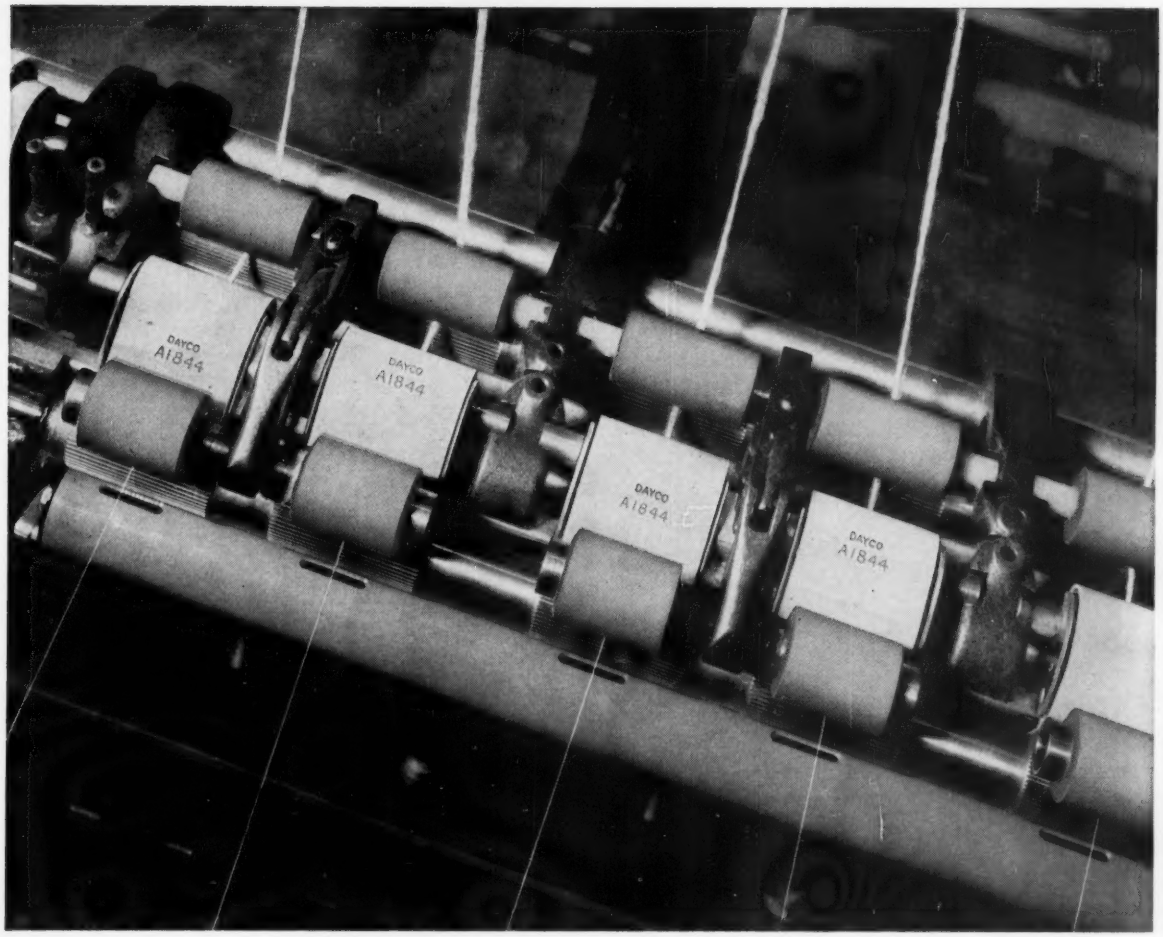
Chemcel, Canadian Chemical & Cellulose Co., Ltd. 2035 Guy St., Montreal

ACETATE | A Celanese CONTEMPORARY FIBER



New Dayco EW661 Cot

Eliminates 4 causes of lap-ups

New Dayco Cots stay dry. Despite near 100% humidity newly perfected EVERGREEN compounds in EW661 Cots defy moisture film. So there is no tendency to hold fibers and cause lap-ups.

New Dayco Cots never become gummy. Even in extremes of heat and humidity new EW661 Cots keep perfect hardness and drawing surface. New EVERGREEN compounds contain nothing to melt under high mill temperatures. No gummy substances to cling to fibers.

New Dayco Cots eliminate surface static. Unlike ordinary synthetic cots new EVERGREEN compounds dissipate static electricity. Result: no static build-up on cot surface to attract fibers.

Fibers won't adhere to new Dayco Cots during shut downs. Monday morning starts are fast, smooth, without a rash of lap-ups. Special compounding makes new Dayco EW661 Cots completely resistant to the action of any oils that might be used on staple fibers.

Take the suggestion of the Dayco Representative who will be in to see you soon. Run a frame of new Dayco EW661 Cots and check the reduction on lap-ups. For immediate facts write The Dayton Rubber Company, Textile Division, 401 S. C. Nat'l. Bank Building, Greenville, S. C.

Dayton Rubber

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DAYCO AND THOROBRED PRODUCTS FOR BETTER SPINNING AND WEAVING

AND THEN WE REALLY PUT IT THROUGH THE MILL

. . . to assure top-spinning performance!

Acrilan's toughest customer is right here in the plant.

His standards are the most exacting in the industry. To earn his approval, every pound of Acrilan must have the right answers to questions like these:

How well does it lap? Card? Process on roving and spinning frames? What maximum percentage of fly can be expected? Is the web uniform? What about the quality of the card sliver?

The "customer" is our own pilot mill... operating a complete fiber processing system... at work 24 hours a day, 7 days a week... checking Acrilan performance under the conditions existing in your mill.

This, it should be noted, is *one* stage in a comprehensive philosophy and system of quality control, guiding Acrilan production from initial polymer to final staple cutting or tow packaging. A philosophy that believes product improvement depends on knowing that still more improvement can be made. A system based on control specifications, tolerances and inspection standards previously held unattainable for the newer, man-made fibers.

The Acrilan acrylic fiber produced to these specifications is what we "put through the mill" for equally critical testing in actual performance. The gains—in terms of *your* problems—can be stated most concretely:

- FAR BETTER FINISH CONTROL... *with the direct result of improved carding and spinning uniformity.*
- IMPROVED HIGH BULK PROCESSING ... *for greater assurance of fabric shrinkage control.*
- FLY REDUCTION *so significant it is raising yarn quality, reducing mill costs and waste.*
- UNIFORM DYEABILITY... *no change in dye merges for over two years now.*
- STAPLE LENGTH UNIFORMITY *superior to the most demanding needs in the textile field.*

Obviously, these are meaningful advances... crucial to efficient, economical mill operation. They demonstrate why mill after mill for the last two years has cited Acrilan as its smoothest-running, top-spinning fiber.

ACRILAN

ACRILAN®

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RISER
STAIR EDGE
TREAD
100% Rayon
Pile destruction at
8000 pedestrian traffic
90% Rayon—10% Nylon
Pile destruction at
11,000 pedestrian traffic
80% Rayon—20% Nylon
Pile destruction at
76,000 pedestrian traffic
70% Rayon—30% Nylon
Pedestrian traffic 98,000
60% Rayon—40% Nylon
Pedestrian traffic 98,000
50% Rayon—50% Nylon
Pedestrian traffic 98,000
100% Nylon
Pedestrian traffic 98,000

in carpeting, nothing adds wear like NYLON!

How does it wear? That's one of the most important questions consumers ask about carpeting. Permanent textures, higher recovery from crush, excellent resistance to matting, and greater resiliency are other important performance characteristics consumers want to know about. Nylon has them *all*, and they've been proved not only in the laboratory, but in *actual wear tests, too!* Flame-resistance? Nylon does not support flame. *No other fiber adds durability to floor covering like nylon!* The toughest possible traffic test proves... The Higher The Nylon Content—THE LONGER THE WEAR!

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, Sales Office: 500 Fifth Avenue, New York 36, New York · 627 Guilford Building, Greensboro, North Carolina

Identical strips of carpeting—without padding of any type—were laid on bare, rough steps in an industrial plant and subjected to heavy plant-personnel traffic. Each carpet contained a different percentage of nylon as indicated in the unretouched photograph shown. The carpets were rotated progressively and regularly. Top 3 samples were removed after stair-edge showed 80 to 95% pile destruction. Test for remaining 4 was stopped at the 98,000 pedestrian mark.

CLIMB ON THE BAND WAGON!

Retailers across the land are planning strong fall promotions of suits in blends of "Orlon"* and wool. And with good reason. Retailers know the popularity of the benefits "Orlon" adds to suits. They know how profitable these suits have been in the past. They have seen this year's new fabrics, styles, colors and patterns in "Orlon" acrylic fiber and wool. And these alert retailers have heard about Du Pont's powerful fall advertising campaign in *Sports Illustrated* and its highly promotable theme, "Extra Point: 'Orlon'". Tie in with this football motif. For *volume* business, for *sound* business, for *new* business, get on the band wagon.

DU PONT
REG. U.S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry

DRESS RIGHT—you can't afford not to! MEMBER, AIGDA

*P.S. ORLON is our registered trademark. When you use it: *Distinguish it*– Capitalize and use quotes or italics, or otherwise distinguish by color, lettering, art work, etc. *Describe it*– Use the phrase "'Orlon' acrylic fiber," at least once in any text. *Designate it*–As "Du Pont's trademark for its acrylic fiber" in a footnote or otherwise.

MODERN
TEXTILES MAGAZINE

May 1957
Volume 38 Number 5

Publisher's Viewpoint

What Next for NFT?

The long discussed merger of the American Cotton Manufacturers Institute (ACMI) and the National Federation of Textiles (NFT) will soon be a reality. ACMI's members, at its annual meeting last month, ratified a resolution of its board of directors approving consolidation with NFT. It is expected that NFT members will also vote shortly in favor of joining ACMI.

As its name indicates, ACMI is made up of mills manufacturing cotton fabrics mainly. The National Federation of Textiles is the successor of the Silk Association of America organized in 1872 and the National Association of Rayon Weavers organized in 1933. NFT includes in its membership nearly 80% of all the looms engaged in the weaving of man-made fibers and silk, alone or in blends.

When the merger becomes effective, there will come to an end as an independent organization a trade association with a distinguished record of 85 years' service to the silk and man-made fibers areas of the textile industry. To list the accomplishments of NFT during this long period would require a thick volume. Outstanding among these services has been its arbitration council, its design registration bureau, its registration of trade names, and its fabric inspection service. It is reported that these functions, as well as many of the other services NFT has performed on behalf of the industry, will be continued by ACMI in the form of a Man-Made Fibers and Silk Division with headquarters in New York City.

We believe that the new organization created by the merger should have the support of all progressive-thinking men and women in the man-made fibers industry. At the same time it is appropriate, we believe, to express the hope that, in its new form as a part of ACMI, the old spirit of the National Federation of Textiles will go marching on, unhampered and undiminished.

Let it not be forgotten that one of the major functions of NFT during the past 25 years has been to champion the cause of man-made fibers—the fibers used by most of the mills that have been members of NFT. And let it not be forgotten that there exists a competition between man-made fibers and cotton for important markets.

In view of these facts, it should also not be forgotten that man-made fibers and the mills that process them will undoubtedly need in the future, as they have in the past, an organization to defend their special interests. It is to be hoped that the Man-Made and Silk Fibers Division of ACMI will not find itself handicapped by its bigger parent organization, on that day which is certain to come, when there is need for a strong trade voice to speak out on behalf of man-made fibers.

In connection with the merger, there is another point which we feel needs frank discussion. That is the question of the name of the new combined organization. There are many in our industry who feel that to continue to call it "The American Cotton Manufacturers Institute" would be misleading and a disservice to the man-made fibers industry. Perhaps it would be more descriptive of the new organization to call it "The National Federation of Textiles," organized to have a cotton division and a man-made fibers—silk division.

Or the problem might be solved simply by removing the word "cotton" from the name, "American Cotton Manufacturers Institute" and substituting the word, "textile". Then the new name, "American Textile Manufacturers Institute" would be more truly descriptive of the broader function of the organization now that it embraces the mills devoted to processing man-made fibers, as well as mills devoted to cotton.

A. H. McCullough

PUBLISHER

OUTLOOK IN TEXTILE MARKETING

By ROBERT C. SHOOK, Textile Economist

Improved marketing is key to textiles' future

There have been two recent developments of major importance to the textile-apparel industries. One is a growing recognition that excess spindles and looms, which for years have created an irresistable temptation to over-produce, are now largely eliminated. This opens the road to better and more stable profits.

The second is the increased emphasis on merchandising and marketing policy, as an essential means by which to convert improved profit possibilities into reality. The next few years may show that the second is even more important that the first.

What Is Good Marketing?—But what does an optimum marketing policy consist of, for an individual company or for the industry as a whole? This is a complex question, which is still causing a great deal of confusion.

Too frequently the individual concern adopts an unduly limited concept of marketing policy. Too frequently the "industry" fails to organize joint responsibility for those aspects of marketing analysis and research which would benefit the industry as a whole.

First of all, there is a confusion of terms. "Marketing", "merchandising" and "distribution" are used almost interchangeably as descriptive adjectives, but there is no general agreement what they should mean.

Perhaps it would be better to decide, once and for all, that an optimum policy, whether it is called "marketing", "merchandising", or "distribution", must meet these requirements:

(1) The product itself must be an optimum product. Technological progress will be led astray unless it is guided, in its practical applications, by factual knowledge about the consumer's requirements. Too often this is lacking.

(2) The product, in the form in which it goes to the consumer, must be identified. Otherwise, there is no way in which the consumer can ask for it. Furthermore, the consumer must be convinced that it is an optimum product. Otherwise, there is no reason why the consumer should ask for it.

(3) The retailer must be recognized and accepted as the industry's personal representative to the consumer. Optimum policy, based on sound economic and marketing research, must strengthen the textile-apparel retailer in his competition with the hard-lines distribution.

Some Progress Has Been Made—Marketing policy in the industry is far more effective now than it was even a few years ago. A few labels are recognized by consumers as having some significance with regard to quality. A few companies are helping the retailer to stimulate the sale of selected items. And research, as a guide to marketing and to technological application, is broadening.

But confusion among consumers and retailers has increased, too, as the number of new fibers, new blends and new finishes, has proliferated. Furthermore, these individual programs, in most or all cases, omit some of the essentials of optimum marketing policy. And as yet there is little or no progress toward industry-wide quality labeling, or industry-supported economic and marketing research.

Textiles' Economic Position Now Strong—The economic position of the textile industry, in terms of capacity measured against rising population, is stronger than it has been since the first world war, perhaps since the beginning of this century.

The marketing orientation of the industry, which to all intents and purposes has developed only recently, is most promising.

It is not yet plain, however, that the industry has recognized the job ahead of it as a big man's job, or is willing to send more than a small boy to do it.

Dr. Shook, vice president and research director, A. W. Zelomek Associates, Inc., 350 Fifth Ave., New York City.

Three Faces of William J. Erwin

Erwin of Dan River

A new textile giant was formed recently when big Dan River Mills merged with big Iselin-Jefferson. The seasoned millman who heads the new combination is confident that its future will be profitable

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

LAST YEAR, in management circles in the textile industry, men who considered themselves beyond surprise by anything so ordinary as a merger, were in fact more than slightly amazed by advance rumors of a really tremendous marriage. Iselin-Jefferson and Dan River Mills, both never regarded as merger-minded, gave unmistakeable signs of believing that two could live, if not more cheaply, at least more profitably than one. When the combination was effected with hardly any of the usual hesitations, false beginnings and coy recoils, the resulting company, an enormously enlarged Dan River Mills, loomed big and strong among the half-dozen super-giant mill groups on the Southern textile scene.

To the huge aggregation of mill buildings in Danville, Va., Dan River's acquisitions added Woodside Mills, operating seven plants in six locations in South Carolina; Anchor Rome Mills in Rome, Ga.; and Alabama Mills with plants in seven Alabama communities. Also joined to Dan River Mills as the parent company was Iselin-Jefferson, the big commission selling house which handles sales for 25 textile manufacturers in addition to Woodside and Alabama.

Productionwise, the new Dan River Mills has at its disposal a total of 18,365 looms, and 841,000 spindles. To operate these and many auxiliary facilities, such as dyeing and finishing plants, the company has about 18,000 employees. Iselin-Jefferson, which is run as an independent unit under the new set-up, is, of course, an important component of Dan River's earning potential. In the 12 months ending last June, I-J billings were $112 million.

The huge Dan River—Iselin-Jefferson combination is fortunate in having at its head a man with a long record of successful management of big textile operations—a man who seems unworried and not overworked by his heavy new responsibilities. William James Erwin, who is 56 years old, came to Dan River in August, 1953, from Riegel Textile Corp., where he had been a vice president and a director serving as general manager of Riegel's Ware Shoals operation in South Carolina. When Erwin arrived at Dan River, he found a difficult assignment waiting for him. There was trouble and confusion in the huge textile operation which in 75 years had grown up to dominate the little town of Danville, Va.

In the preceding year, Dan River's net earnings had fallen to $822,000 from $5.8 million in 1951, while net sales had ebbed to $91 million from the 1951 figure of $112 million. In addition to a sharp fall in profits, Dan River, when Erwin took over, was plagued by an abnormally high labor turnover, a worrisome accident frequency rate, and a swollen force of clerical workers in relation to production workers. Prevailing throughout the big mill also was a sense of drift and uncertainty partly caused by a widespread feeling that for some years Dan River had been inclined to ride off in all directions in the search for new markets and new products.

Under Erwin's guidance conditions at Dan River have improved greatly. Net earnings have risen steadily and quite remarkably: $1.5 million in 1953; $2.8 million in '54 and $3.8 in '55—all earned on sales that did not climb back above the $90 million level until 1955.

Figures for 1956, recently published, reflect five months' operations of the new acquisitions and they increase substantially both sales volume and net earnings. These figures are $122 million for sales and $5.3 million for earnings.

Basil D. Browder

Mr. Browder, executive vice president of Dan River, has been with the company for 40 years

In the four years of Erwin's service as president, while earnings improved, labor turnover and frequency of accidents in the Danville plants have lessened. The percentage of separations per 100 employees has come down from 57.2 in 1952, to 29.9 for the first nine months of 1956. The accident frequency rate has dropped from 7.7 in 1951 to 1.2 in 1956. Workmen compensation costs have fallen from $133,000 in 1951 to $102,000 in 1956 even though weekly compensation rates in that period have moved up from $20 to $30. Also as an index of the soundness of Erwin's management practices, the number of salaried employees has declined from 904 in 1952 as compared with 11,179 production workers to 715 as compared with 9,837 in 1956.

While all these measurable improvements in Dan River's condition have been going on, there have been equally important but less tangible improvements. The morale of both plant workers and administrative employees has been significantly bettered. William Erwin is a well-liked man among Dan River people. He has achieved his improvements without big shake-ups in personnel, and without bringing in many new people. By and large, he has worked with the staff he found when he came to Dan River, and it is a telling indication of his character that all the men in responsible management positions at Dan River are enormously pleased to be working for him. They make no secret of their immense satisfaction with the way he has quietly and firmly brought back a sense of order and purposeful forward motion to the big mill.

Basil D. Browder, Dan River's executive vice president, for example, rates Erwin as the best all-around executive he has worked under in his 40 years with the mill. Browder went to work for Dan River when H. R. Fitzgerald was president (he was the son of the company's first president, Thomas B. Fitzgerald). Since those early days, Browder has worked with and observed at first hand five presidents of the company in action.

"Bill Erwin," he says, "is the most able of the Dan River presidents I have known. He is a sound thinker, and extremely considerate of people. In addition to being a good executive here in the mill, he is interested in community affairs, active in his church and devoted to his family."

"As an executive, Erwin is a man who makes sound decisions quickly," Browder says. "He manages to get things done in the course of a normal working day."

C. E. Rowe, a seasoned textile executive whom Erwin brought in last year to be secretary-treasurer of Dan River, says that Erwin has great "leadership ability." Erwin, Rowe explains, has the knack of putting good men in key jobs, giving them freedom to work and achieve, but all the while keeping an observant and evaluating eye on their efforts. As an example of Erwin's capacity for correct decisions as solutions for major problems, Rowe cites the case of Dan River's formerly strong activity as a weaver of rayon suitings. In 1953, when Erwin took over, Dan River had a great deal of its capacity tied up in the increasingly dubious market for rayon suitings. In fact about ten per cent of the mill's volume was in this cloth that was fading out fast as an item in summer suits for men.

Without fooling around with half-solutions, without delaying while waiting for some possibly miraculous switch of the market that would put rayon suitings back as a profitable item, Erwin stopped completely Dan River's production of these cloths. "This," Rowe says, "took nerve. Erwin is a man of real courage."

Rowe cites another major example of Erwin's executive courage. When Japanese ginghams about two years ago were flooding the American market at prices below the level where Dan River and other American mills could compete profitably, Erwin gave orders that pushed Dan River full speed ahead into higher quality, fancier colored yarn goods—a market where Japanese fabrics could not meet Dan River's superior styling and superior quality. He backed the new, more smartly styled line of cottons with heavy advertising on a national scale.

Speaking about Erwin's policy for modernization and replacement of equipment, Rowe points out that Erwin believes in consistent replacement, based on a long-range plan, of some equipment every year without going overboard by big splurges in new machinery—splurges that can turn a mill upside down

(Continued on Page 69)

C. E. Rowe

Mr. Rowe is secretary-treasurer of Dan River

How IRC Nylon Behaves in Carpets

Part 4

By Dr. T. G. Finzel and Dr. S. M. Fok
INDUSTRIAL RAYON CORPORATION

In this article on carpets made of Industrial Rayon Corporation's New Nylon blended with rayon, the results of tests on wear, soiling, stain removal and electrostatic behavior are reported. Previous articles of this series[1,2,3] described the cost, appearance and compressional characteristics of the carpets.

In the near future, the results of the tests described in this series will be summarized.

The construction of all carpets in this study was 3/16 inch gauge tufted, 7½ stitches per inch, ⅝ inch pile height with approximately 32 ounces of pile weight per square yard. The yarns were all 2/2 c.c. (53/2 woolen count or 840 yards/lb.) 4.25 "Z" x 4.75 "S" made of 15 denier x 3" bright staple.[1] All carpets were back-sized with a standard latex compound.

Wear

The wear behavior of IRC nylon and rayon blend carpets was determined by means of service tests and laboratory abrasion tests. Preliminary floor service tests clearly indicated that IRC nylon substantially improves the wear resistance of rayon blend carpets. To accelerate these tests, the carpets were placed, without lining or padding, on heavily traveled concrete stairs, the point of maximum wear being localized at the stair edge. The stairs were located in an industrial plant employing more than 1,000 persons and the carpets were subjected to the severe wear of maintenance and yard employees as well as production personnel.

After about one year of severe service only three carpets (100% rayon, 90% rayon-10% nylon, and 80% rayon-20% nylon) had been worn to 83%-95% pile destruction. After a pedestrian count of 98,000, all of the remaining carpets were taken up, cleaned and their extent of wear portrayed by photographic means (Fig. 1). The center of the carpets in Fig. 1 shows the severe wear which occurred at the stair edge. The portion of the carpets covering the stair tread is shown at the right of center while the riser portion is at the left. The carpets were ranked in numerical order with rank 1 given to the carpet with the least wear.

One flat test (Method I) was carried out by a commercial testing laboratory using a modified type National Bureau of Standards' Leather Abrasion Machine. The second flat test (Method II) and the flex abrasion test (Method III) were run on a Stoll-Quartermaster Universal Wear Tester in the IRC laboratories.

TABLE 1—RESULTS OF STAIR EDGE SERVICE WEAR TEST

Carpet Composition	Traffic Count	Percent Pile Destruction	Rank
100% Nylon	98,000	See Fig. 1	1
50% Nylon-50% Rayon	98,000	See Fig. 1	2
40% " -60% "	98,000	See Fig. 1	3
30% " -70% "	98,000	See Fig. 1	4
20% " -80% "	76,000	90%	5
10% " -90% "	11,000	83.5%	6
100% Rayon	8,000	94.8%	7

The outstanding wearability of those carpets containing at least 30 per cent of the new IRC nylon staple made it necessary to apply laboratory tests to predict carpet behavior. While we recognize the greater value of floor test data, it is interesting to note that there was a high degree of correlation between the results of the laboratory tests and the data obtained thus far from service wear tests.

Laboratory Abrasion Tests

Three types of abrasion tests were performed to obtain rankings of all carpets. Two of these tests were of the flat abrasion type and were performed on the pile face of the carpet samples. The third was a flex abrasion test on samples of the yarn used for the pile in the various carpets.

In Table 2, the relative agreement among the three abrasion test methods is shown. All carpets were ranked by number in each of the three tests with the carpet showing the best results ranked as No. 1. Each test ranked the 100% IRC nylon carpet as No. 1, the 10% nylon-90% rayon blend as No. 6, and the 100% rayon carpet, No. 7. Although Methods II and III gave corresponding carpets the same rank, Method I showed two reversals of adjacent blends.

Results in the third column of Table 3 were derived from data of Method II in Table 2. When compared with actual service wear test data given in Table 1 and shown in Fig. 1, abrasion data obtained by Method II appear very conservative. Since Method II yielded the most conservative results, these data

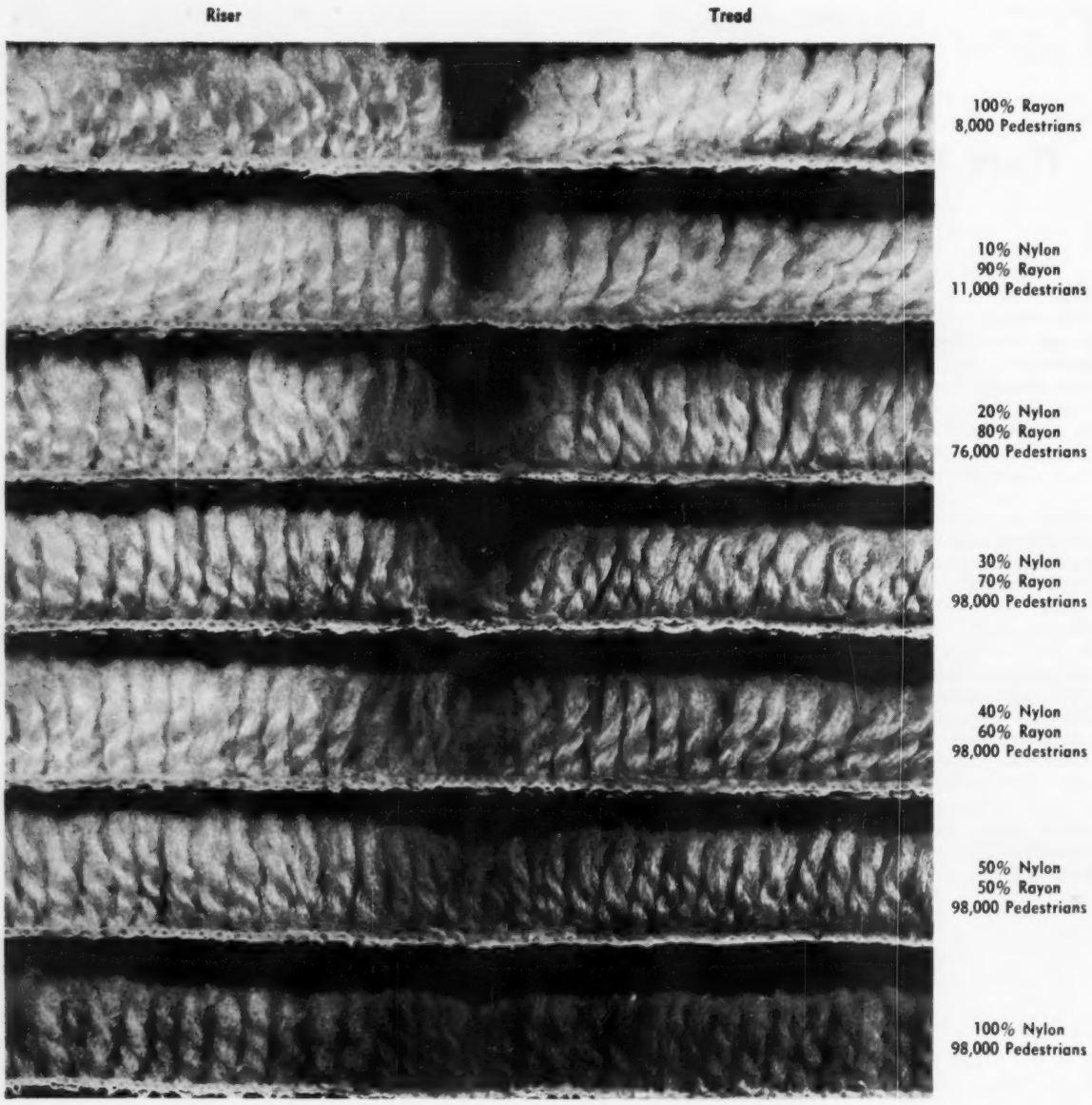


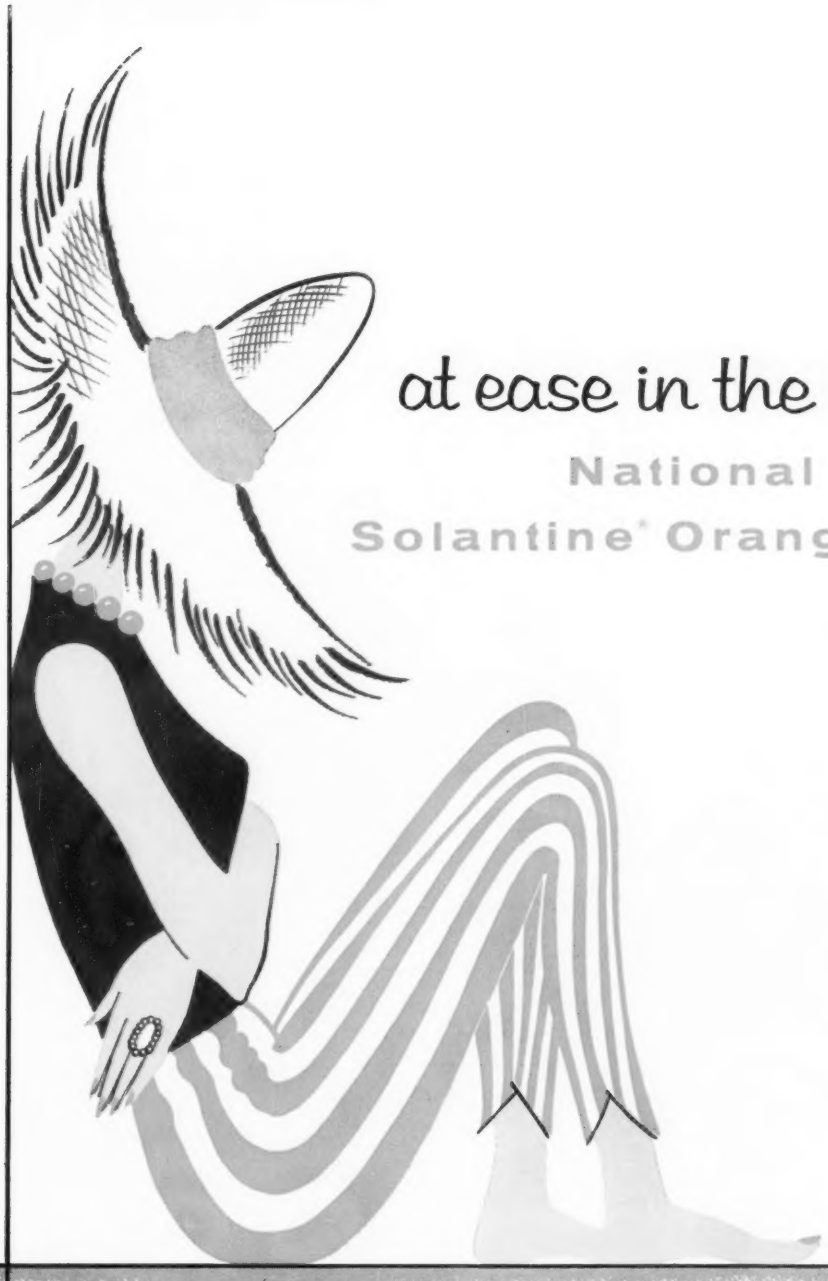
Fig. 1—Stair Edge Service Wear Results. Nylon and Rayon Blend Carpets.

were used in evaluating the relationship between abrasion life and retail price. The results, given in Tables 2 and 3, show that IRC nylon increases the resistance to abrasion of rayon in an amount much greater than the increase in retail selling price would indicate. This is shown graphically in Fig. 2. The shaded area represents the economic advantage which IRC nylon offers in various nylon-rayon blend carpets, based on the most conservative laboratory abrasion resistance results.

(Continued on Page 40)

TABLE 2—ABRASION TEST RESULTS

Carpet Composition	Method I Commercial Flat Test		Method II IRC Flat Test		Method III IRC Flex Test	
	Cycles to Destruction	Rank	Cycles to Destruction	Rank	Cycles to Destruction	Rank
100% IRC Nylon	43,700	1	28,500	1	23,700	1
50% IRC Nylon 50% Rayon	30,200	3	14,000	2	5,900	2
40% " " 60% "	33,800	2	13,300	3	3,800	3
30% " " 70% "	28,900	5	11,700	4	2,800	4
20% " " 80% "	29,600	4	9,800	5	910	5
10% " " 90% "	19,700	6	8,300	6	340	6
100% Rayon	13,300	7	7,000	7	260	7



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IRC Nylon

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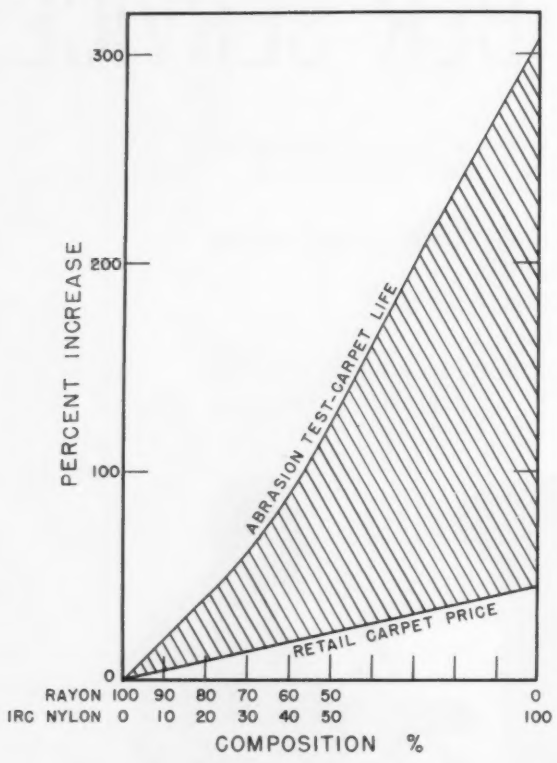

Fig. 2—Abrasion Resistance and Retail Price of Nylon and Rayon Blend Carpets

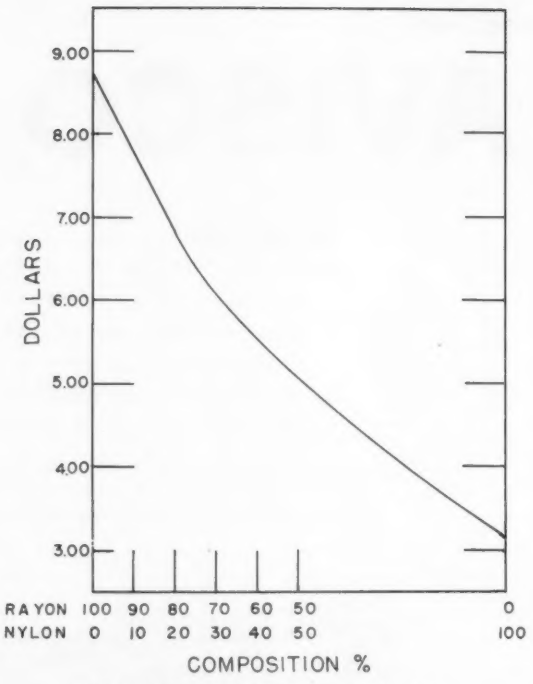

Fig. 2A—Carpet Price based on Abrasion Life

cumulation of soil which is apparent to the human eye or can be measured by photoelectric means in terms of light reflectance.

An examination of the surface of a wool fiber shows that the irregular wool scales act as pockets in which soil becomes entrapped. Much of the actual soil on a wool fiber cannot be seen because the soil is highly localized in these pockets. Thus, the absolute soiling of a wool carpet may be high, yet its apparent soiling may be low. On the other hand, nylon is a smooth fiber and has no such irregularities as wool which localize soil. Electron micrographs published by Cooke and Roth[1] show this effect very well.

Because apparent soiling is readily evident it is naturally of more immediate concern to the consumer. The importance of this type of soiling makes it imperative to recognize the effect of such variables as color, luster, texture and finish of the carpet fibers. Lack of a thorough understanding of these factors has led in the past to some erroneous conclusions regarding the soiling characteristics of nylon carpet fiber.

TABLE 3—RETAIL PRICE VS. ABRASION LIFE

Carpet Composition	Retail Carpet Price*		% Increase of Carpet Abrasion Life	Carpet Price Based on Abrasion Life-Dollars
	Dollars	% Increase		
100% IRC Nylon	12.70	45	307	3.12
50% IRC Nylon 50% Rayon	10.85	24	100	5.43
40% " " 60% "	10.40	19	90	5.47
30% " " 70% "	10.00	14	67	5.99
20% " " 80% "	9.55	9	40	6.82
10% " " 90% "	9.20	5	19	7.73
100% Rayon	8.75	0	0	8.75

* See Reference (1) for additional information regarding retail prices.

Soiling Characteristics

Although a great deal has been written on carpet soiling, there remains much to be done to further the understanding of the soiling characteristics of various carpet fibers and in interpreting the variables which influence the measurement of soiling. Studies in this area have taken on added significance as a result of the recent trend toward bright pastel shades in carpets.

In general, soiling falls into two classifications—absolute and apparent. Absolute soiling can be measured as grains or ounces of dirt per square yard of carpet. Apparent soiling may be defined as the ac-

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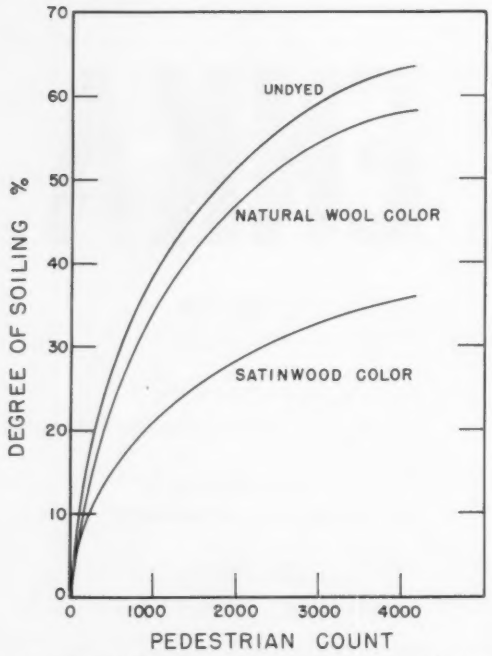

Fig. 3—Effect of Color on Apparent Soiling Rate of Bright Nylon

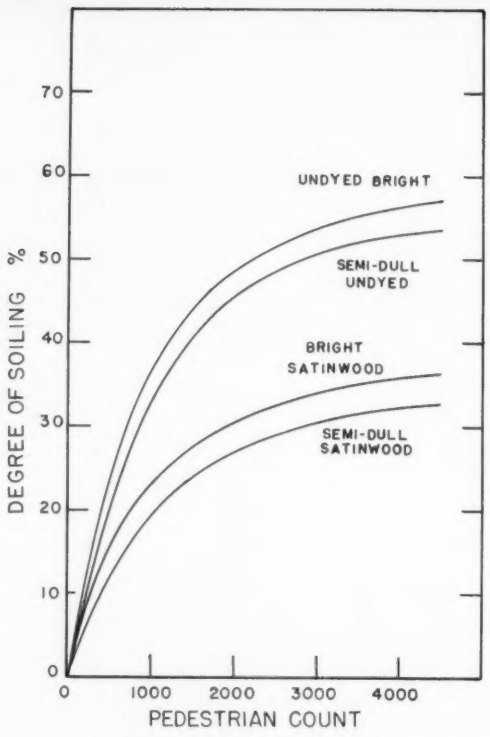

Fig. 4—Rate of Apparent Soiling. 100% Bright vs. 100% S.D. Nylon

IRC produces both bright and delustered types of nylon carpet fiber. While the delustered fiber has reflective properties similar to those of wool, the bright fiber is characterized by a degree of luster and sparkle not present in any natural carpet fiber. This bright luster, which is so desirable from the styling standpoint and which cannot be obtained in wool carpeting, acts like a mirror with respect to light reflectance. Under certain conditions of use, the apparent soiling of bright nylon may be more evident than in wool although there may be more absolute soil present in the latter.

The effect of fiber color and brightness on the soiling rate is shown in Figs. 3 and 4. In this carpet study, delustered nylon was used only in the soil study section. IRC nylon staple has a uniform pure white natural color as compared to the cream or light tan color of natural wool. In this investigation, some of the nylon samples were dyed the color of natural wool, some were dyed a still deeper satinwood, and some were tested in their natural, undyed white. Although the degree of apparent soiling of the undyed, pure white IRC nylon carpets appeared to be relatively high, the cream-dyed and satinwood-dyed nylon showed, as anticipated, a lower degree of apparent soiling and an earlier attainment of a constant level of soiling. It can thus be concluded from these tests that fiber color has an important effect on the rate of soiling and that IRC nylon and wool of the same luster and color have comparable apparent soil characteristics.

The fact that there is little difference between the soiling rates of nylon, rayon, cotton and wool was reported previously by Rice[5] according to tests made by the Research Laboratory of the National Institute of Rug Cleaning. Similarly, our studies revealed a negligible difference in the apparent soiling of the IRC nylon and rayon blends. This is clearly shown by the horizontal line U of Fig. 5. All carpet blends represented by line U were cleaned, similar to off-location commercial cleaning, but otherwise untreated prior to testing.

The study of soiling included an evaluation of several products which recently have been reported

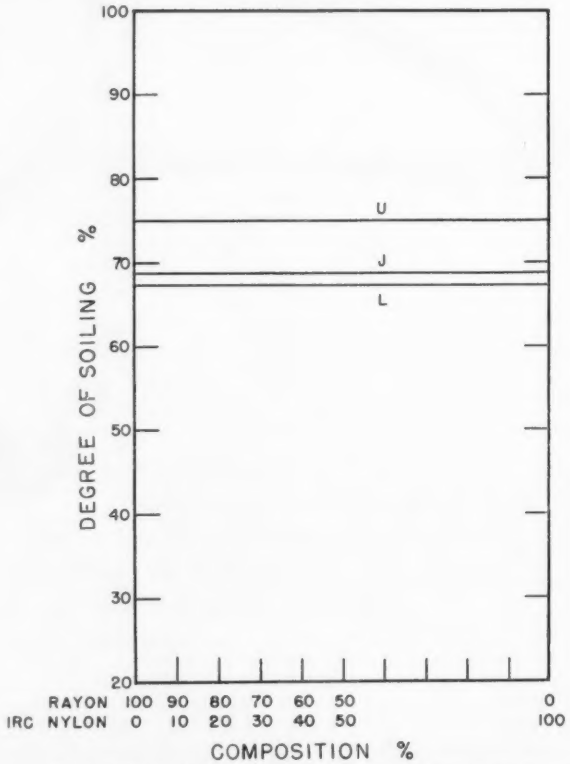

Fig. 5—Effect of Soil Retardants on Nylon and Rayon Blends

(Continued on Page 54)

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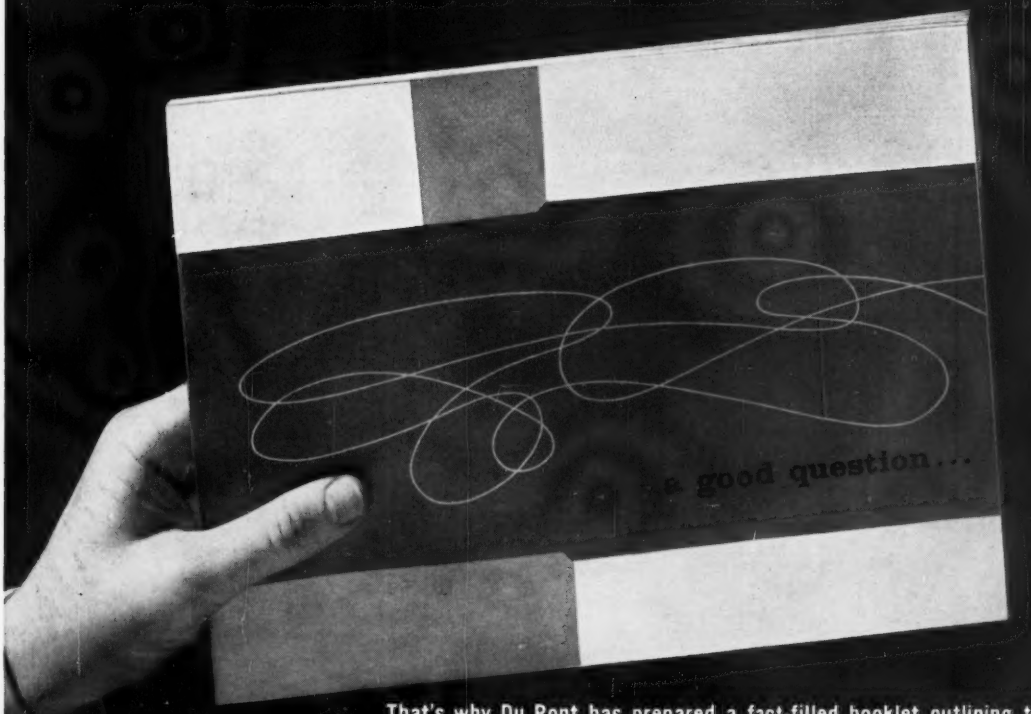

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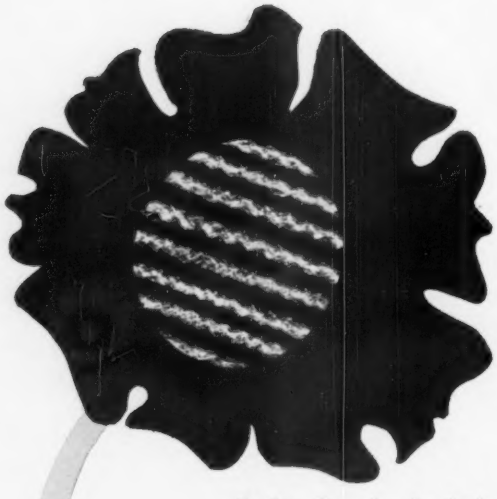

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REPORT FROM EUROPE

BY SPECIAL CORRESPONDENT

U.K. mills seek ways to improve falling exports to Canada; Italians selling more silk fabrics here

PARIS—The United Kingdom, which has been Canada's second best supplier—after U. S. —of man-made fabrics, has seen its position undermined steadily during the past few years. Reasons for export deterioration, and suggestions for checking it, are cited in a report published in London by the Board of Trade's Export Branch.

Until 1949, Britain shipped some 9 million linear yards (about 2.5 million lbs.) annually to Canada—mainly as piece goods. Exports have now dipped to around 2 million yards and remain weak. According to the report, reasons for decline are: Competition from other foreign countries, mainly Germany, Japan, Hong Kong and Austria; lack of adaptability by U. K. manufacturers in meeting Canadian tastes; seasonal style factors—based on New York—which U. K. mills find difficult to follow, and Canadian practice of maintaining minimum inventories.

Remedies are Recommended—It is suggested that U. K. firms: (1) Concentrate on shirtings, sportswear and children's wear fabrics made of man-made fiber, because British mills are used to long forward buying. (2) Adapt wool-man-made fiber blends for men's summer-weight suitings. (3) Design man-made fiber piece goods more closely along lines demanded by Canadians.

French Nylon Output Expands—Viscose Francaise, which absorbed Comptoir des Textiles Artificiels at end of 1956, has big plans for expanding nylon tire cord production at its Valux-en-Vexin plant, just outside Lyon. The company's rayon operation will not be soft-pedalled, however. No production goals have been mentioned. The new operation will have good financial support based on old Comptoir assets, plus those of Givet-Izieux, rayon makers, and a real estate and banking group—all part of the new Compagnie Industrielle des Textiles Artificiels et Synthetiques, as combine is called. (France's two other nylon producers are Societe Rhodiaceta, now also part of the combine, which makes Nylon 66, and Societe Valentinoise d'Applications Textiles, which makes Rilsan—so-called nylon 11 with a castor oil base.)

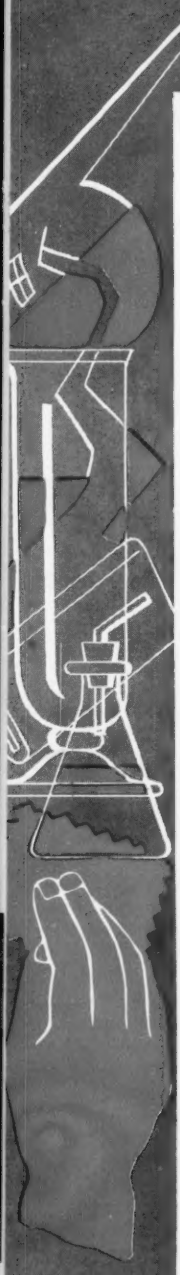
Italian Silks Improve—Italian silk exports rose last year due, chiefly, to better sales in U. S., the industry's major export market, Gustavo Notari, association secretary, said in Como recently. Some 64% of exports—550,000 kilograms, valued at $10.5 million—went to U. S. Most was shantung for summer suits and a large yardage for ties, umbrellas, home furnishings and scarves.

Nylon for Map Use—Swiss textile finishing firm, Raduner & Co., Ltd., of Horn, has developed a process to give glossy fine-paper touch to nylon for use as map "paper." An especially thick nylon weave, with a two-sided coating of a patented chemical process, makes the fabric responsive to inks of almost all kinds while maintaining usual nylon characteristics. Joseph Bancroft & Sons, Wilmington, Del., are licensees in U. S.

German Lubricant-Free Synthetic—The German firm, Vereinigte Glanzstoff Fabriken, Wuppertal, has come up with a 100% lubricant-free synthetic fiber—said to be the first in the world. The basic fiber is Floxan, a crimped viscose. Yarn is being spun on the wool system by Gerrit van Delden, Gronau, with only relatively simple mechanical adjustments required. The new technic eliminates after-scouring. It should be good for floor coverings and blankets.

(Continued on Page 89)

DYEING and FINISHING SECTION



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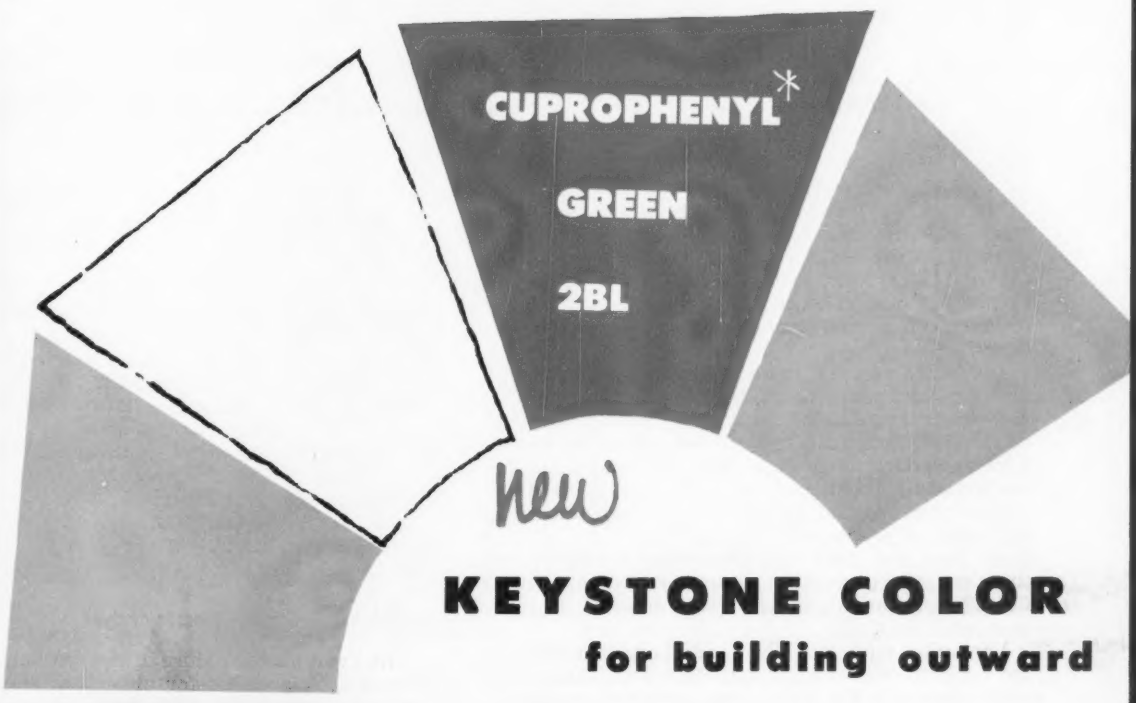

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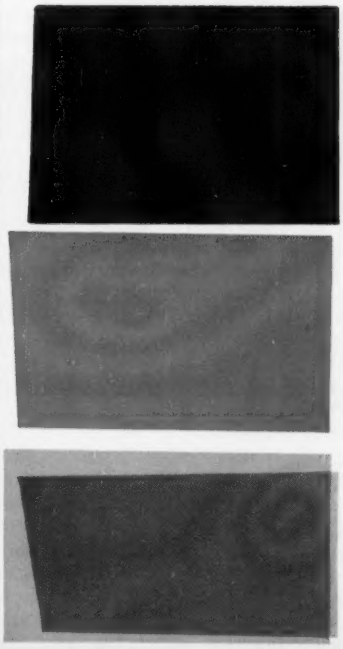
for building outward



From Geigy—exciting news: a new green—a bluer, more vivid keystone color for use as a superb self-shade, or to produce a wide range of cool summer colors—both never before possible with Cuprophenyls.

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GEIGY

DYESTUFFS

New trends in

Part 1

Dyeing and Finishing

By Hillary Robinette, Jr.
ROBINETTE RESEARCH LABORATORIES INC.

Here is part one of a detailed review by a leading authority of recent developments in wet processing

THIS review of recent developments in textile wet-processing and finishing is not intended to detail the hundreds of new dyestuffs and finishes used in the United States. It is, rather, a report on the use of chemicals and chemical techniques which have reached commercial importance in the textile industry.

The increased use of man-made fibers has presented problems and areas for progress and development, in wet-processing and finishing of textiles. The constantly increasing use of synthetic fibers has stimulated research and development efforts on the part of the natural fiber interests to improve their products and to impart to fabrics made from natural fibers the desirable properties exhibited by synthetics. At the same time, the producers of synthetics, recognizing the desirable properties inherently present in the fibers of nature also turned to chemistry to solve their problems.

Beginning with raw fibers, additions of chemicals are made to control static and impart desirable spinning properties. For years, simple mineral, vegetable, or animal oils were adequate to treat natural fiber raw stock and impart the necessary modifications in frictional properties, allowing economical conversion to yarn. Because of the static and different physical characteristics present in the new synthetics, new treatments have, of necessity, been devised to allow the conversion of synthetic fibers.

The synthetic fiber manufacturers have developed, for each of their fibers, a producer finish which is usually a combination of several chemical compounds that have been found, through experimentation, to be adequate to impart to their particular fiber enough modification so that the textile mill can begin the processing of the raw fiber into yarn.

The static effect is, of course, a serious problem with hydrophobic fibers. The fiber manufacturer has, of necessity, been required to apply a sufficient amount of producer finish, to allow for the initial handling of the fiber by the textile manufacturer. The amount of producer finish usually applied is in the neighborhood of ¼ of a percent on the weight of the fiber. Since the fiber manufacturer has no control as to the ultimate end use of his fiber, that is whether it is to be blended with other fibers, or whether it is to be spun into a tightly or loosely spun yarn, it is not possible for him to apply a producer finish which will be found adequate in every case.

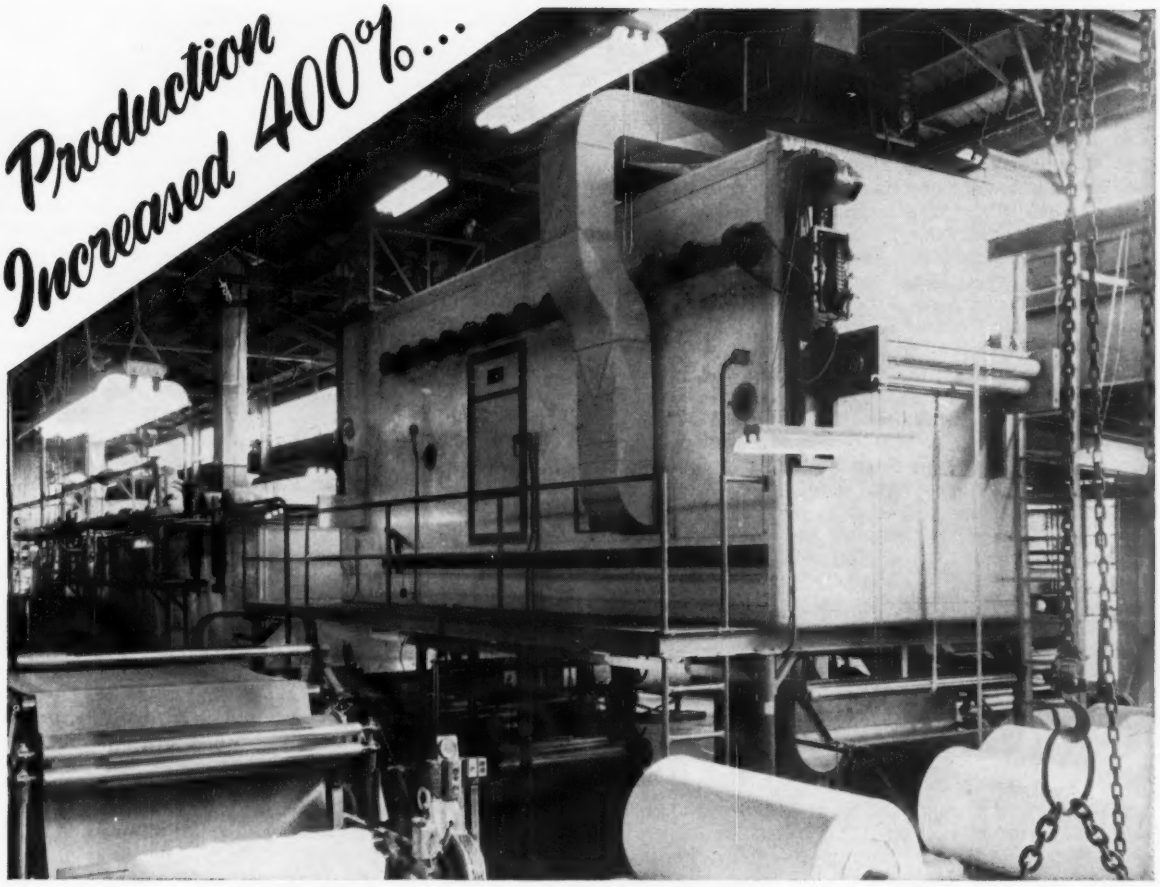
Therefore, textile mills have adopted a number of chemical substances for further treating the textile fibers as received. Among the organic compounds which have been adopted for use as fiber treating agents and spinning aids are the high molecular weight non-ionic ethers based on ethylene oxide and the amphoteric amino alcohol fatty acid condensation products. The adoption of the use of these compounds on synthetic fibers has led to the investigation of their use on wool as well. It has been found that, particularly in the carpet yarn field, the wax-like amphoteric fatty acid condensation products, in addition to controlling static and imparting improved spinnability to the fibers, contributed a marked degree of soil-resistance to the rugs made from these carpet yarns. Several United States textile chemical producers are now manufacturing these improved lubricants for use on both synthetic and natural fibers.

Research creates new classes of dyes

The hydrophobic nature of the synthetic fibers, has also been responsible for difficulties encountered in dyeing and finishing. The increased commercial use of the hydrophobic fibers by the textile industry has stimulated research departments of dyestuff manufacturers to develop entirely new classes of dyes. At a recent meeting of the American Association of Textile Chemists and Colorists, a representative of the Du Pont Co. reported on the successful synthesis of dye molecules, specifically designed to be compatible with the chemical and physical requirements of the different hydrophobic fibers. A new group of cationic dyes now includes eleven colors and the group is known by the trade marked name of the Du Pont Company, "Sevron". The Sevron dyestuffs are particularly suitable for dyeing Orlon, Du Pont's acrylic fiber. It has been reported that the Sevron dyestuffs impart superior brightness and have wet fastness comparable to that of vat dyes on cotton. The wash fastness is also reported to be, in most instances, excellent. These cationic dyes are supplied by simple, direct dyeing processes.

Other dyesuffs specifically useful on the polyamide fibers and the polyester fibers have been developed. It has been established that the polarity of the dispersed dye plays a major role in determining the affinity of the dye for the specific fiber. Though the use of these new classes of dyestuffs, the wash fastness of the extremely hydrophobic fibers has been improved with all of the dyes which are applicable. Major improvements in light fastness, which has been established to be a characteristic of the particular dye-fiber system, have been achieved through the use of these tailored dye molecules.

The above article is derived from a paper originally presented at the 29th Congress Internationale de Chimie Industrielle, Paris, Nov. 24, 1956.



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Carriers to increase rate of dyeing

Because the rate of dyeing of the hydrophobic fibers, particularly the polyethylene glycol-terephthalate fiber, tends to be inconveniently slow, there have been developed so-called "carriers" which are frequently used to increase the rate. These "carriers" are organic compounds that have been found to be effective by increasing the diffusion rate of the dye through the fiber. The organic compounds used as "carriers" include the aromatic acids, benzoic and salicylic acid; phenolic substances such as ortho- and para-phenyl-phenol; aromatic hydrocarbons such as monochlorobenzene or dichlorobenzene; esters of the aromatic acids such as methyl salicylate, and other compounds which show a high rate of diffusion through the hydrophobic fibrous material.

The use of the carrier technique has been extended to polyamide fibers. Walter Hindle, associate director in charge of textile research for the Chemstrand Corp., recently announced a new process for dyeing nylon filament yarns with existing acid and direct dyestuffs, utilizing a special compound. This compound, it is reported, enables the dyer to attain a previously unmatched combination of dyeing uniformity and color fastness. Mr. Hindle stated that these new fast colors make the use of nylon more suitable for taffeta, tricot, sweaters and half-hose. It is reported that through the use of the process, fabrics so dyed can be washed at temperatures up to 160°F. or higher, with excellent resistance to color loss and that the improvement in light fastness is also substantial.

Advances in functional finishes

Chemical technology has also played a major role in the recent advances made in functional and esthetic finishing of textiles. The improved fabric properties which have been achieved through finishing include wrinkle-resistance, water-repellency, spot resistance, soil-resistance, controlled shrinkage, and improved wear.

Probably one of the most important fabric properties of wearing apparel which has been thorougly investigated and on which improvements have been made, is resistance of the fabric to wrinkling. At the present time in American textile circles, hyphenated words seem to be in vogue. "Wash-and-wear" and "drip-and-dry" involve a broad description of an important trend which is taking place in the art of the use of chemicals in the finishing of fabrics.

The term "wash-and-wear" is somewhat less than adequate to describe the activtiy in this field of finishing. It was first used by the manufacturers of the newer synthetic hydrophobic fibers to indicate that garments made from their fibers could be simply rinsed out, hung up to dry and re-worn without pressing. As a retaliatory measure, the producers of fabrics from the natural fibers took up the challenge and began investigating the utilization of finishing materials for cottons to impart to the cotton an equivalent "wash-and-wear" characteristic.

"Wash-and-wear" cottons

Although "wash-and-wear" and "drip-and-dry" cottons have been highly advertised, it is generally agreed that only a few of them are actually so well constructed and so well finished that the garments made from the treated fabrics can be washed, dried and re-worn without ironing. The techniques have been developed, however, to a point where a bare minimum of ironing is necessary to re-establish the original appearance of the garment.

In the case of the hydrophobic fibers "wash-and-wear" fabrics, the "wash-and-wear" property is derived from the natural resistance to wrinkling inherently characteristic in these fibers. The "wash-and-wear" characteristic is contributed to the cellulose fabrics through the use of chemical finishing agents. The most widely used finishing treatments involve a combination of a heat-curable or heat-convertible cellulose reactant, a thermoplastic resinous material, a softener, and the necessary catalyst. The cellulose reactant resins used are, for the most part, ethyleneurea-formaldehyde reaction products. As thermoplastic resins, acrylic ester dispersions and acrylonitrile rubbers are used. As softeners, emulsions of polyethylene or cationic softeners have been found effective and convenient.

The catalysts found to be most useful are the metal salts, usually the chlorides of the alkaline earth metals. During the last year, approximately 600 million yards of cotton fabrics have been processed with finishes of this nature. Indications are that this volume will continue to grow.

How cottons may be modified

At a recent conference sponsored by the National Cotton Council, the present state of chemical finishing processes for modifying cottons to impart the desirable "wash-and-wear" characteristics was completely reviewed. At this conference a report on the adaptation of the usual finishing processes utilizing the so-called cellulose reactant type resins with the thermoplastic finish, softeners and catalysts, to tailored garments by the dry-cleaning industry was covered. Although this work is presently in the experimental stage, it appears that the time may soon come when one may have a garment tailored from an untreated or unfinished cotton fabric and then have the creases and pleats permanently imparted to the garment by the commercial dry-cleaner or commercial laundry establishment. Such garments then would be permanently creased and would be able to be washed or dry-cleaned in the home with a minimum amount of effort. One of the staff members of the Council was wearing a suit constructed entirely of cotton fabric. The suit appeared at least as neat and free from wrinkles as any suit constructed of a worsted fabric. Only on close examination could one discern that it was a cotton fabric.

New Resins for Cottons

Also at the National Cotton Council Conference a spokesman for Shell Chemical Co. announced the results of research in the development of a new non-nitrogen containing resin useful for imparting wrinkle-resistance to cellulose fabrics, stressing the particular use of it on white cotton fabrics which are normally bleached with a hypo-chlorite bleach.

These new resins are epoxy resins capable of reacting further with the cellulosic fiber to so modify the properties of the fiber that wrinkle-resistance and wrinkle recovery are contributed to cellulosic fabrics. It is understood that several million yards of white cotton shirting fabric have been finished with the Shell Chemical Co. product.

Another series of non-nitrogen containing reactant type finishing agents has recently been patented by the American Cyanamid Co. These finishing agents are diglycidyl ether compounds. In addition to their being useful as finishes for cellulosic fabrics, it is stated that they likewise are useful for imparting a degree of shrinkage resistance to woolens and worsteds. ■

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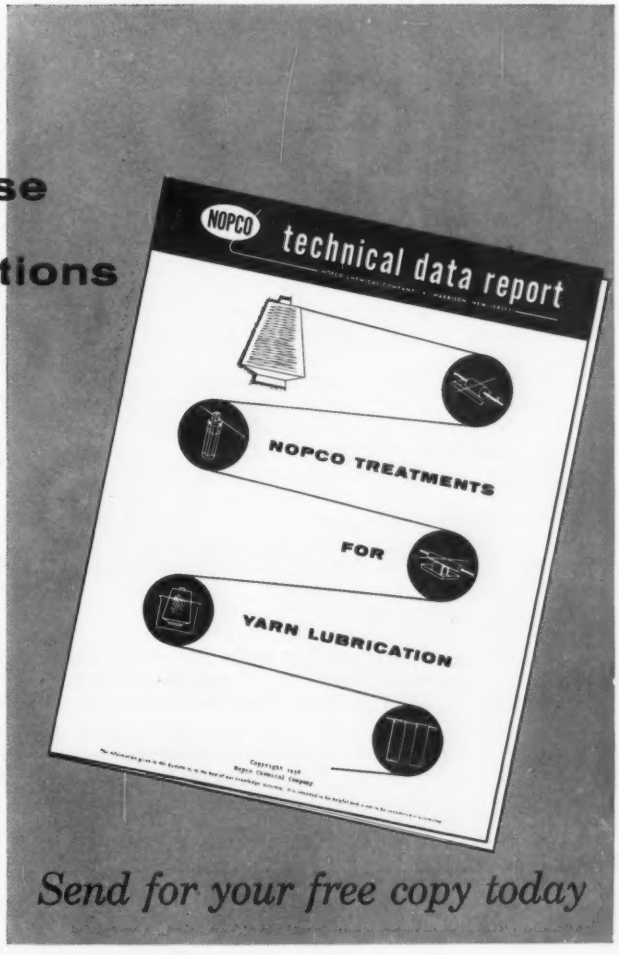

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IRC Nylon

(Continued from Page 42)

as effective soil retardants. These retardants are purported to be finely divided metal oxides which attach themselves to so-called "soiling sites" on the carpet fiber. In effect, they serve as "clean dirt" and fill the spaces that would otherwise later be occupied by traffic soil and dust. As noted in Fig. 5, lines J and L, bright carpets treated with two of these products show a slightly lower degree of apparent soiling than the untreated ones. These results are based on a moderate use of the carpets—about a 6,000 pedestrian count. All carpet fiber blends treated with these products were improved to about the same degree.

If the textile anti-static finish used during the processing of nylon staple fiber is not later removed, it will increase the rate of apparent soiling of the final carpet fabric. Since the anti-static processing finish used in IRC nylon is water soluble, it is removed during any dyeing or scouring process and consequently has no objectionable effect on the soiling rate.

Stain Removal

While soiling is usually considered a gradual phenomenon of change in light reflectance, staining is generally viewed as a sharp change of color. Most carpet staining is the result of accidental dropping of colored foreign matter.

Since nylon is not swollen by water or the ordinary organic liquids, it is easier to remove common stains from nylon carpets than from carpets made of wool, rayon or cotton. When aqueous detergent solutions are used in stain removal, nylon carpets will show less wicking and will take only about one half the drying time required by wool or rayon carpets. The degree of ease of cleaning and quickness of drying, the tests revealed, are directly proportional to the nylon content of the blend.

In general, the same methods used for removing stains from wool carpets can be used for nylon carpets. As in the case of accidental staining of any fiber, prompt action in removal of stains from nylon content carpets is important. The longer the stains remain on the carpet the more difficult is their removal.

Typical results showing the differences in the removal of common stains are given in Table 4. The stains, for the purpose of these tests, were allowed to age 48 hours prior to removal.

Electrostatic Behavior

It is generally recognized that both 100% wool and 100% nylon carpets have a moderate amount of static accumulation at low relative humidities. Rayon carpets, on the other hand, remain relatively static free. The electrostatic behavior of nylon and rayon blends depends upon the moisture regain of the blend. This simple relationship does not appear to apply to wool blends, even though wool has a higher moisture regain than rayon.

Sayre and Weldon[6] showed that as little as 25% rayon in a nylon-rayon blend would eliminate undesirable electrostatic conditions of fabrics as determined by subjective tests. They also reported that static conditions of rayon-synthetic fiber blends were related to the moisture regain of the blend.

None of the IRC nylon-rayon fiber blends between the ranges of 10% nylon-90% rayon to 50% nylon-50% rayon had any indication of static accumulation.

Tests have indicated that bulk fiber blends of nylon and rayon with less than about five per cent moisture regain will exhibit electrostatic effects. Using this figure as a limit, the behavior of any blend can be readily calculated if the moisture regain of each blend component is known at the relative humidity in question. For instance, at 40% RH and 75° F. nylon shows a regain of 2.3% moisture while rayon shows a corresponding figure of 8.7%. Simple calculations show the following:

Blend	Regain at 40% RH, 75°F.
20% nylon-80% rayon	7.4% Moisture
30% " -70% "	6.7% "
40% " -60% "	6.1% "
50% " -50% "	5.5% "

None of these blends show regain lower than 5% and consequently are free from static.

The resistivity of fibers is usually determined by means of a megohmeter. However, a very simple method which can be used by any mill for determining the electrostatic behavior of a staple fiber blend is noting the discharge rate of an inexpensive gold or aluminum leaf electroscope when the electrode is brought into contact with the fiber. A discharge rate of 15-20 seconds or less indicates a fiber blend with satisfactory electrostatic properties. The relation of electroscope discharge rate to moisture content to fiber blend composition is shown in Table 5.

A number of anti-static agents designed for "on location" application have been introduced recently. While some of these have been criticized because of a reported adverse soiling effect, others are understood to be free of any defects. A comprehensive list of about 30 anti-static agents is given by Hearle.[7]

Tests of untreated IRC nylon carpets reveal that whatever static accumulation is present gradually decreases and then disappears after moderate usage. This is apparently a result of the gradual accumula-

TABLE 4—STAIN REMOVAL FROM CARPETS

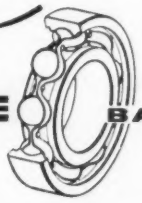
Stain	Cleaner Used*	100% IRC Nylon	50% IRC Nylon 50% Rayon	100% Rayon
Road tar	Solvoil	Complete	Slight stain	Medium brown stain
Rusty water	Synterge	Complete	Slight stain	Slight stain
Ketchup	Water-Synterge	Complete	Very slight stain	Very slight stain
Mustard	Water-Synterge	Complete	Bright yellow stain	Bright yellow stain
Black shoe polish	Solvoil	Complete	Very slight stain	Very slight stain
Peanut butter	Solvoil-Synterge	Complete	Complete	Complete

* The cleaners used were supplied in a "Service Master Kit", Wade Wenger and Associates, Inc., Chicago, Ill.

FACTS

about

NEW DEPARTURE BALL BEARINGS



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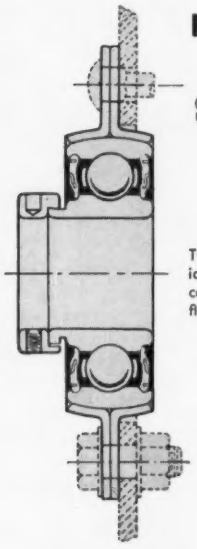
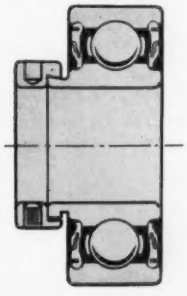


Type AE adapter bearings with spherical outer ring may be used for low cost mountings with stamped steel flanges as illustrated.



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tion of electrically conductive materials during the process of normal service.

TABLE 5—ELECTROSTATIC PROPERTIES AS RELATED TO MOISTURE REGAIN

Carpet Composition	Discharge Rate	Moisture Regain at 57% RH—75°F.
10% Nylon-90% Rayon	Less than 1 sec.	10.6%
25% " -75% "	Less than 1 sec.	9.1%
50% " -50% "	Less than 1 sec.	7.2%
75% " -25% "	1.5 secs.	6.1%
90% " -10% "	2.0 secs.	5.0%
100% Nylon	40.0 secs.	4.0%

TESTING PROCEDURES

Abrasion

Laboratory abrasion results and service wear data were obtained by means of the following methods:

1. Laboratory Abrasion Tests:

Method I (Commercial Flat Test)—At the U. S. Testing Company Laboratory, carpets were abraded against No. 320 Aloxite cloth in a modified type NBS Leather Abrasion Machine using a torque of 60 inch-pounds. All carpets were uniformly abraded until the backings became visible. The number of revolutions required to reach this end-point in each of the carpets was recorded.

Method II (IRC Flat Test)—This test was run on the Stoll-Quartermaster Universal Wear Tester. Carpet samples 4¾" in diameter were clamped with pile face up over a flat metal disk 2" in diameter. This exposed a 2" diameter circular area of carpet to the abradant, No. 320 Aloxite cloth, which was clamped in the upper head and held against the carpet under a 5 pound load. While the upper head reciprocated at approximately 120 cycles per minute, the flat metal disk holding the sample was rotated at 1.2 rpm. After every 1000 cycles, the abradant was renewed and the abraded surface of the carpet was cleaned by blowing with an air jet.

Destruction was assumed to have been reached when the pile had worn to the backing on any spot of the area being abraded.

Method III (IRC Flex Test)—To avoid the necessity of preparing carpet fabric samples, a rapid test was devised to measure yarn abrasion characteristics of the individual yarns. In this test, the various carpet yarns were woven flat as filling with a light weight warp into a plain weave fabric. Five filling-wise strips, 8½" long and 1¼" wide, were cut for each yarn sample. These were raveled to a 1" width and the warp ends were removed from a 1½" long section in the center of each strip. The samples were then positioned in the Stoll Wear Tester so that abrasion occurred only on the filling without any interference from the warp. The abradant was a square, tipped, folding bar described in ASTM Flexing and Abrasion Method D-1175-55T. A 1½ pound head weight and a 5 pound tension weight were used. The number of cycles required to break all the yarns in each strip was recorded as the end-point.

2. Service Wear Test:

By means of double-faced adhesive tape, the carpets were mounted directly on concrete steps without the use of lining or padding. The edges of the concrete steps were rather sharp—approximately ¼" in radius of curvature and without nosing. All carpets were mounted in such a manner that the direction of tufting was perpendicular to the stair edge. After each pedestrian count of about 500, all carpet samples were vacuum cleaned, hand brushed and carefully examined for wear. All carpets were rotated progressively after every pedestrian count of 4000.

The test on a carpet was terminated when the pile wear at the stair edge had reached 80%-95% destruction. This point was determined visually by the person in charge of the test and was confirmed by weighing the tuft residues in the area of maximum wear.

Soiling

Apparent soiling was determined by means of a photoelectric reflection meter (Model 610, Photovolt Corp., N. Y.). This highly sensitive instrument measures the intensity of reflected light which is related to the degree of soiling. Through the use of this instrument, errors due to subjective evaluation by means of the human eye were completely eliminated.

The degree of apparent soiling is defined by the following equation:

$$\text{Degree of Apparent Soiling} = \frac{R_o - R_s}{R_o} \times 100$$

where R_o = reflectance of the original clean carpet
R_s = reflectance of the soiled carpet

Prior to testing, the carpets were thoroughly vacuum cleaned and brushed. The direction of final brushing was found to be highly important in obtaining comparable light reflectance readings. Final brushing with the carpet grain was the method chosen in the present tests.

The positions of the carpets were rotated periodically to eliminate the possibility of preferential soiling of any one sample. Soiling tests were terminated when the soiling curves showed a tendency to level off.

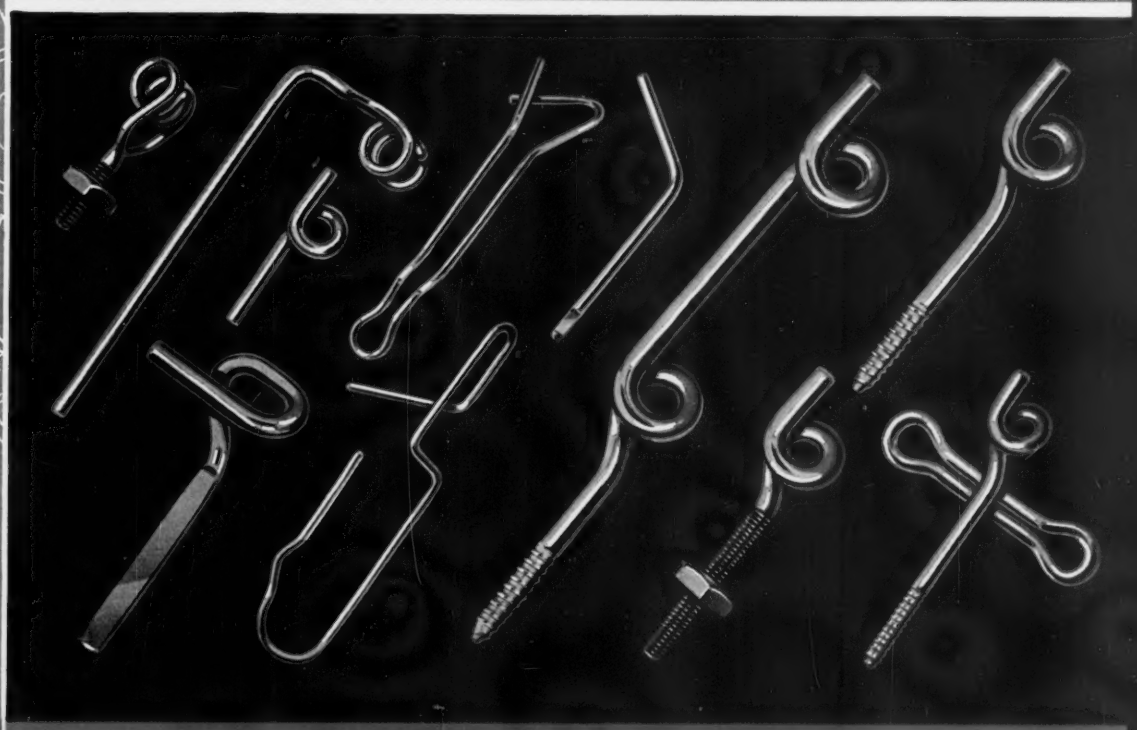
ACKNOWLEDGEMENTS

The authors are greatly indebted to members of Industrial Rayon Corporation's Merchandising Division, Central Laboratory and High Polymer Research Division for their invaluable assistance in the preparation of this report.

REFERENCES

(1) Finzel, T. G. and Romer, M., *Modern Textiles Magazine* **37**, 33 (Oct. 1956).
(2) Finzel, T. G. and Fok, S. M., *Modern Textiles Magazine* **37**, 39 (Nov. 1956).
(3) Finzel, T. G. and Fok, S. M., *Modern Textiles Magazine* **37**, 40 (Dec. 1956).
(4) Cooke, T. F. and Roth, P. B., *Textile Research Journal* **26**, 238 (1956).
(5) Rice, J. W., Proceedings, Eleventh Annual Convention, National Institute of Rug Cleaning, Inc., 121 (Jan. 1956).
(6) Sayre, J. F. and Weldon, A. J., *Modern Textiles Magazine* **35**, 43 (July, 1954).
(7) Hearle, J. W. S., *Skinner's Silk and Rayon Record* **30**, 156 (1956).

MACHINERY and EQUIPMENT SECTION



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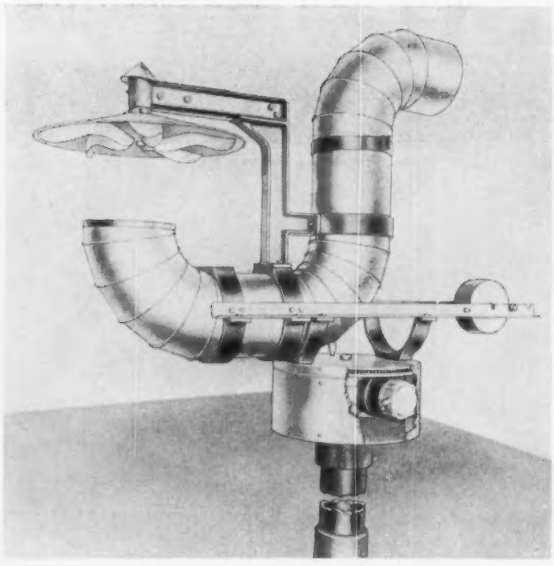


C. & M. Raw Stock Blender

THE CURTIS & MARBLE Raw Stock Blender permits better mixing of stock while saving time and labor. The necessity of securing a proper blending of different kinds, colors and qualities of stock in order to produce even shades, even yarns and even fabrics is apparent to all manufacturers. This Blender can be used with any ordinary type of mixing picker.

The Raw Stock Blender is used on different kinds of stock—either natural or synthetic as—for example—in blending rayon with cotton or wool. In woolen and worsted mills, it is used for handling almost all kinds of wool from fine to coarse and also for mixing wool, shoddy, cotton, etc. "rowy" goods have been eliminated by the use of this device.

Carpet mills use it for blending the coarser wools used in their plants. For cotton blanket mills, where the shades of different colors must be as near alike as possible, the Blender is said to be extremely useful. It has been successfully used in blending two materials differing as widely as asbestos, usually short and heavy, with cotton, which is light and fluffy.

The C. & M. Raw Stock Blender permits economical mixing or blending. If a mill wishes to lay down the stock before running it through the picker, the different kinds or colors of stock can be fed directly to the inlet of a fan for blowing the stock to the Blender. Or an automatic feeder can be connected to the fan and the stock fed into the hopper. One man can blend several different kinds of stock by using batch boxes drawn up near the feeder. He can throw an armful from first one batch box and then another into the feeder. The oiling is done in such a case by an automatic oiler attached to the feed table of the mixing picker. The stock then goes through the picker and is delivered by the fan to the gauze room.

Here the stock passes through the piping to the Blender where it is discharged upward against the underside of a revolving canopy. There are vanes on the underside of this canopy so that it will revolve as the stock strikes it. At the same time that it revolves on its own axis, the rotating arm swings slowly around the room with the canopy about midway between the central column and the gauze room wall. By this combined action the stock is spread and laid down in the gauze room, layer after layer, one on top of another, like a heavy snowstorm.

Thus after one man has handled the stock and it has been passed through the picker and Blender, it is bedded down on the gauze room floor more uniformly than it would have been if three or four men had bedded it down armful by armful in the picker room.

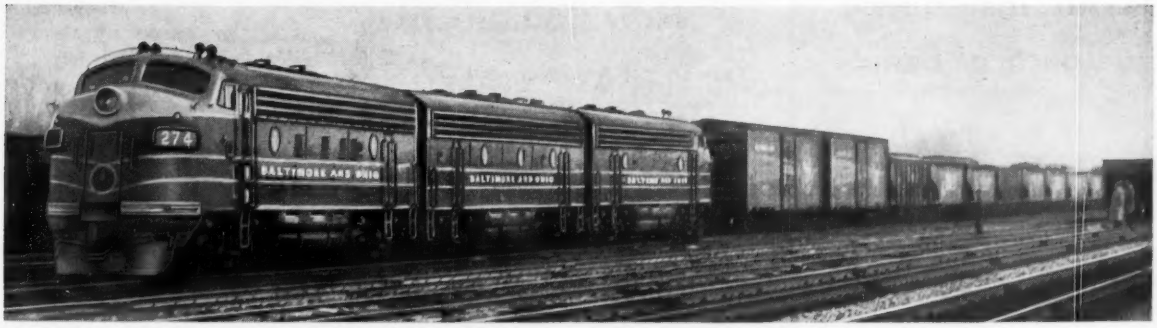
After the stock has passed to the gauze room once, it is often taken out and run through the picker and feeder again. In some cases the stock is passed through the Blender a second time; in other cases it is delivered directly through piping from the picker into the bins in the card room. Card bin canopies are often used there to preserve the blend.

The arrangement generally followed has an inlet pipe coming from the picker and fan, which is usually run horizontally along the top of the gauze room and connected to an elbow at the top of the pipe. Where the ceiling is comparatively low, the piping from the blower or fan may be run above the top of the gauze room and then come straight down through the ceiling.

The rotating arm, or portion of the piping which revolves, is mounted on a ball bearing turn table and is positively driven by a built-in gearmotor.

A gauze room about 16 feet square usually gives excellent results, although one 14 or 18 feet square or more will be quite satisfactory. A portion of the upper part of the gauze room partition should have an opening covered with screen to allow the escape of air, and so prevent back pressure on the fan or the picker.

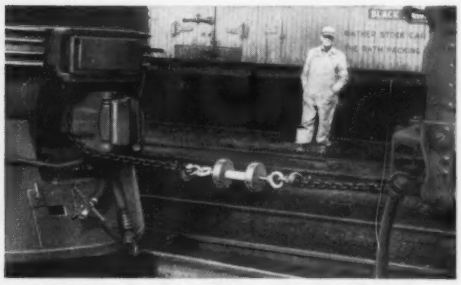
The regular size of piping used in the Blender and in the gauze room is 12" diameter; this size will carry as large an amount of stock per hour as most mills run through their pickers. If, however, you have an exceedingly large production, the Blender may be made with 14" diameter pipe. ■



LESTERSHIRE BOBBIN PULLS 357 TONS DEAD WEIGHT—Something new in railroading—and textiles—took place recently at the Wilmington, Del. yards of the B & O Railroad. In a unique test, designed to dramatize bobbin strength under severe tension, a Lestershire Bobbin by National acted as "draw-bar" for 18 freight cars with a total dead weight of 736,700 pounds.

A NEW KIND OF "DRAW-BAR" FOR RAILROADS—Suspended between a three-unit diesel and a 357-ton string of cars, the Lestershire Bobbin awaits its supreme test. No abuse received in service will ever equal the punishment it must take in just a few minutes.

BEGINNING THE SUCCESSFUL TEST—Here, National engineers shackle bobbin into test harness. Bobbin chosen was a Precision Bobbin featuring Lestershire patented anchor screw construction. Heads are made of Vulcanized Fibre, barrel is hard Northern Maple.



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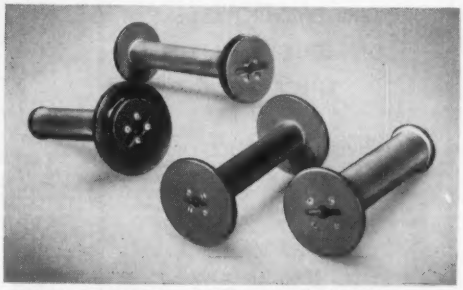

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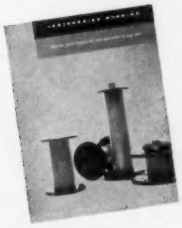

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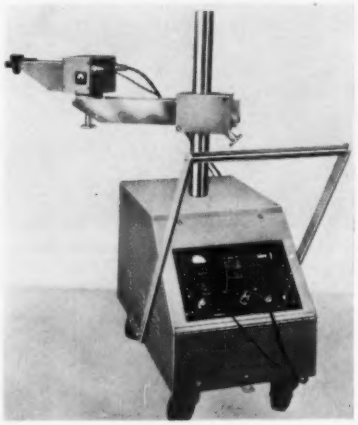
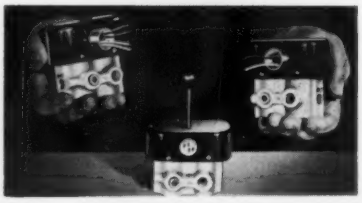


A compact, portable electronic instrument for inspecting, counting and providing quantitative analysis of yarn defects in spinning, winding, twisting, spin draw and other operations has been announced by Lindly & Co., Mineola, N. Y. The company reports that any defects over a pre-determined size can be detected. *For further information write the editors.*

'Quick-Dump' Valves



Development of three new "Quick-Dump" control valves, for fast smooth operation of double-action cylinders, has been announced by Humphrey Products Division, General Gas Light Co., Kalamazoo, Mich. The valves are four-way, five-port models and have no internal springs, packings, pistons or sliding metal-to-metal contacts. Two of them are electrically operated and the third is equipped with hand lever. Valving action on all of them is said to be ultra-fast and positive, giving smooth flow, dead-seal closing, extra large capacity and prolonged service life. *For further information, write the editors.*

New Nylon Hot Stretch Machine

An infra-red nylon hot stretch machine, designed by Hale and Kullgren, Akron, Ohio, in conjunction with Dunlop Tire and Rubber Corp., has been placed in use by Dunlop. Reportedly the only one of its kind now in use in the U. S., the machine is said to uniformly temper nylon cord at an extremely fast rate. The tempering also retards tendency of the cord to "grow" in service.

Effect of this machine is to preset the stretch in the tire so that stretching will not occur when the tire is in use, thus making the nylon even stronger. The process also increases the heat-resistance quality of nylon, keeping to yield a tire will run cooler and give better mileage.

Pressure Roll Covering

American Felt Co., Glenville, Conn., now has available to mills and mill supply houses an improved, lower-priced loom pressure roll covering which is distributed exclusively, under the trade name Mek-Tex, by Mechanical Felt & Textiles Co., Mek-Tex is used to cover takeup or pressure rolls on silk or rayon looms. It is claimed that the new roll covering is at least twice as strong as any of the competitive coverings and is uniform in quality and thickness, spotlessly white and resilient. *For further information write the editors.*

Draper Shunt Magnet

Design features of the new No. 87 AC shunt magnet, for use with the Draper K-A electrical warp stop, are reported to reduce wear of component parts and permit easy adjustment and servicing. The magnet coil is wound on a solid one-piece nylon bobbin, and the shunt is securely fastened to the bobbin head; this positive relation of coil parts is said to permit more accurate settings. A new lock spring holds the coil firmly in place, to ensure correct and uniform positioning of coils and simplify their replacement. *For further information write the editors.*

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REPORT FROM JAPAN

Japanese rayon fabric exports not expected to be big enough to worry U. S. weavers

By B. Mori

OSAKA—One of the interesting topics of conversation in the industry here is whether Japan can supply any significant quantity of rayon fabrics to U. S. market, either in form of fabric or sewn apparel. Feeling seems to be that (1) rayons will never present "problem" of magnitude of recent cotton difficulty; and (2) that emergence of limited quantity of spun rayon fabrics in form of apparel for export is more likely development to be watched.

Spun Rayon Technology Advanced—Japan has made rapid strides in manufacture of spun rayon yarns and fabrics in past few years especially in production of crimped staple, direct-spun yarns, resins and other finishes and weaving of yarn-dyed fabrics. Very fact that spun rayons are exported to so many markets around world has stimulated fabric development. In fact, range of spun rayons available here is broader than in cottons. There are many intricate yarn-dyed spun rayons woven in Japan which are not seen in U. S.

However, it is considered foregone conclusion that Japan cannot offer U. S. any staple plain spun rayon fabrics which still form great bulk of production here—from point of view of either quality or price. If this market does develop, it will be in yarn-dyed fancies, in apparel. But consensus here is that such development will be relatively small.

Meanwhile, manufacturers of rayon staple continue with their production expansion plans —including factories being built and equipped with help of American engineers. These manufacturers are not at all dismayed by recent "over-production" controversy. They are unanimous in their confidence in future domestic and export needs for their products.

Silk Trade Has Double Trouble—The silk business with the U. S. has presented two developments in recent months which have upset "normal" lines of the trade. First, American demand for waste silk, for manufacture of all-silk or part-silk spun fabrics in U. S., has grown rapidly—so rapidly that supply is tight and Japanese-woven spun silks cannot compete in U. S. market. This has caused cries of protest from domestic weavers.

On the other hand, American consumption of raw silk seems to be lower this year, while American purchases of Japanese-woven filament silk fabrics are trending upward. This offers no comfort to American weavers. So while over-all consumption of silk in the U. S. seems to be rising gradually, there is cause for dissatisfaction in certain business elements on both sides. Raw silk exporters are not happy either. A sudden decrease in American purchases of doupioni silk, used to make shantung and similar cloths, has caused some distress here, too.

Cotton Exports Holding Up—The cotton textile export business as a whole has been strong during the first few months of the year; but it has been deliberately less than active with U. S.

The Government and industry predict that this year's exports will total 1,259,000,000 yards, a trifle under actual shipments in 1956, but a trifle higher in value. Exports in 1956 were actually a few percentage points over first predictions for that year; and early signs at least may indicate that this year's estimate is, also, a little conservative.

Still under debate is "ideal" size for cotton industry in 1960—target year in Government's master economic recovery plan. Minor differences in figures being unimportant, it appears likely that number of spindles to be installed at that time will be capable of producing little over 1 billion pounds of yarn, roughly same as present rate of operations.

"Economic Diplomacy" Is Japanese Policy—Businessmen the world over are watching Government's plans for accentuating its policy of "economic diplomacy"—by which is meant the pushing of Japan's trade through diplomatic negotiations and encouragement of trade by Japan's diplomatic representatives abroad, as their first duty. The strength of this move will be tested when Prime Minister Kishi visits Washington this summer for talks with the top-level figures in the U. S. Government.

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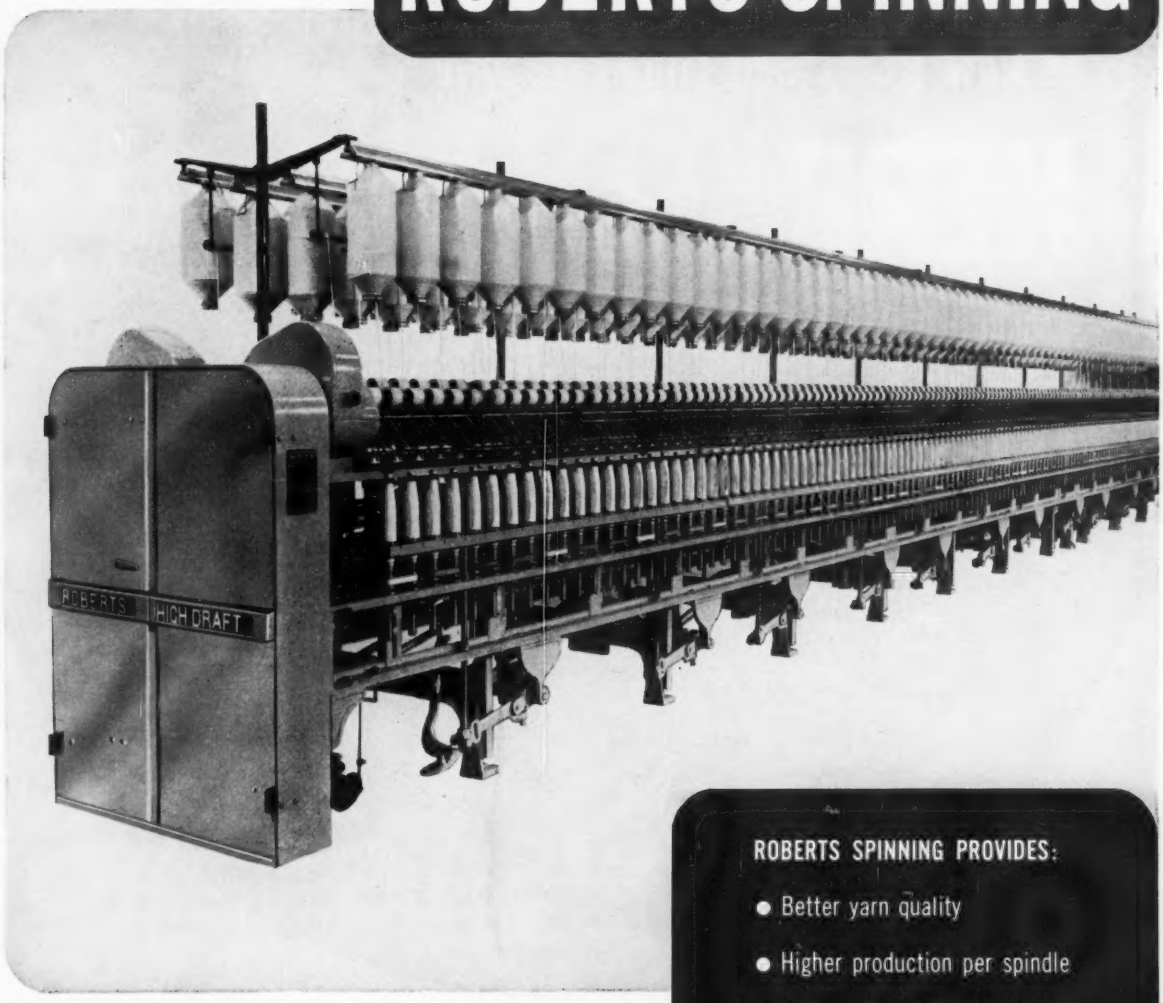

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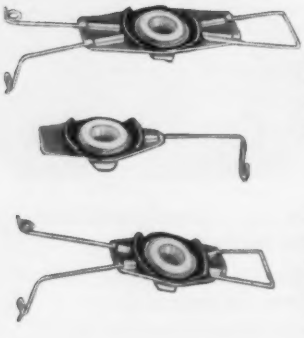

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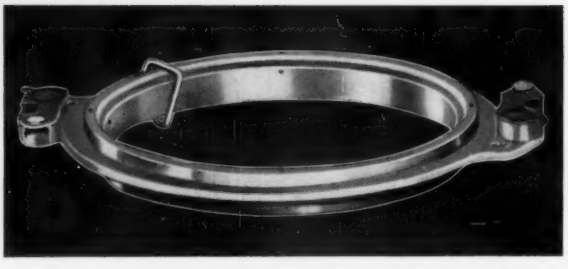

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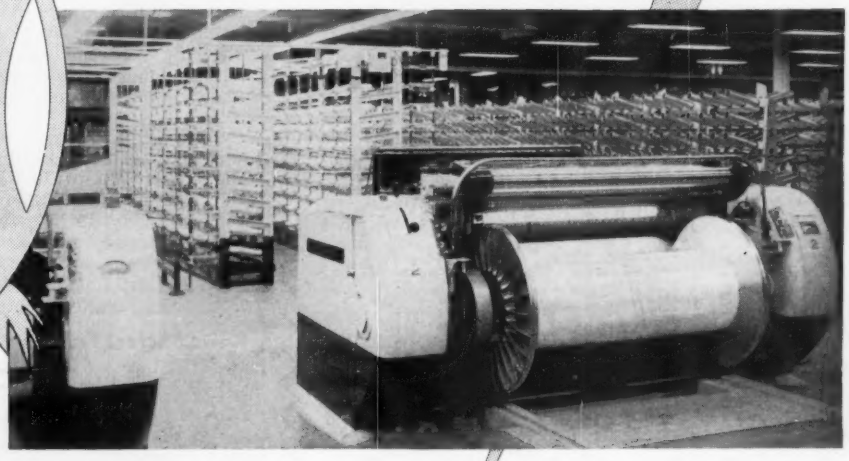

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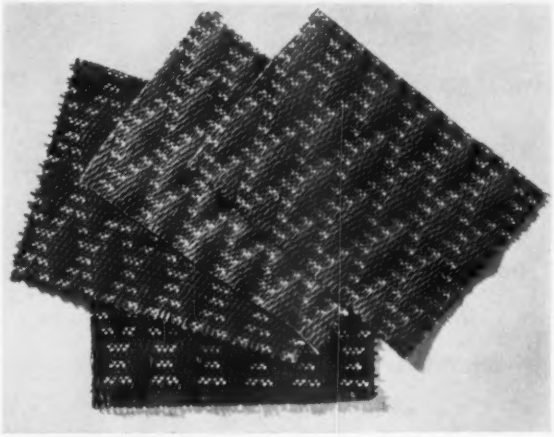
The Pellon Corp. has a new group of non-woven inner construction textiles for the apparel and over-the-counter trade. An exclusive bonding agent that gives full protection against chlorine or other bleach discoloration in the washing cycle is built into four new Pellon numbers: 719, 739 and 759 for the apparel trade and 35 for over-the-counter trade. These non-chlorine retentive fabrics are said to be suited for summer dresses, undergarments, bathing suits, shirts or any apparel normally washed with bleaches.

New Metlon Yarns

Newest of the metallic yarns is Metlon H. T. (high tenacity) Mylar (Du Pont's polyester film.) In addition to exceptional washability, heat resistance, durability and dyeability, the H. T. quality has approximately double the strength of Metlon-with-Mylar yarn. Another yarn, the Extra Fast Color Metlon-with-Mylar, has been developed especially for the automotive trade.

Raised-Effect Fabrics



A new process that creates raised-effect puff patterns and is said to combine beauty with utility, has been announced by E. W. Twitchell, Inc., Philadelphia, Pa. These "Poly-puf" fabrics are useful as automobile seat cover materials, and are also suitable for furniture, upholstery, appliance covers and other items.

New H. T. Nylon Yarn

Commercial availability of a new type of high tenacity nylon yarn with improved resistance to degradation from heat and sunlight has been announced by Du Pont. The new yarn, designated as Type 330, is available in 210 denier, 34 filament, bright luster, and is priced at $1.59 a pound or 10 cents higher than the regular 210 denier.

100% Dynel Carpets

Long-wearing carpets of Dynel, with "built-in" resistance to soiling, staining, insects, mildew, burning and chemical damage, have been developed for contract use by C. H. Masland & Sons and Alexander Smith, Inc. The new carpets are made of a special type of carpet Dynel fiber developed by Union Carbide and Carbon Corp. in cooperation with the two mills. The new carpeting is said to embody properties especially desirable for contract installations.

TDI Show Takes Place

Samuel Schwartz, Chairman of the Tenth Annual Golf Tournament of The Textile Distributors Institute, Inc., has announced that, as in past years, the highlight of the three day affair will be an industry lampoon, written, produced and directed by Bud Schlesinger, The Chemstrand Corp., in collaboration with Richard Deneau, Richelieu Fabrics, Inc.; Donald Holmes, E. I. du Pont de Nemours & Co.; Standish Holmes, American Enka Corp.; Arthur Horn, Scheuer & Co.; Terry Kilborne, William Skinner & Sons; Lon Nave, American Bemberg; and Edgar Schlesinger, United Merchants & Mfrs., Inc.; all of whom will play important parts in the show, as well as other industry thespians later to be announced.

Rutger Fabrics Joins TDI

The Board of Directors of The Textile Distributors Institute, Inc. has unanimously elected to membership in the Institute, Rutger Fabric Corp., 295 Fifth Avenue, New York City, distributor principally of suitings and slacks for the men's and boys' wear trades as well as a line for the women's wear trades. Samuel M. Boosin, president and Sam Kramer, vice president, will represent the company at Institute meetings.

Mills Shorten Selling Terms

As this page went to press, five large mills had shortened their selling terms to 30 days from the former 60 day period which had been in effect for the past four years. The move to curtail selling terms was started by Amerotron Corp. which announced that it was shortening its terms to 30 days net, anticipation at 6% per annum. Deering Milliken & Co., Burlington Mills, Greenwood Mills and J. P. Stevens & Co. soon announced similar shortening of selling terms.

When the shortening of selling terms was first announced by Amerotron and Milliken, the Textile Distributors Institute, through its president, Walter Ross, sent 30 telegrams to gray goods producers, protesting the shortening of terms. The text of the telegram follows: "The Textile Distributors Institute, Inc. vehemently protests the arbitrary action of certain mills in proposing to change their terms from net 60 days to net 30 days. We strongly believe that this move is unsound and destructive to the industry. Urgent that you have a meeting with us before you reach any decision."

Expressing a contrary view, E. P. Lewis, executive vice president of James Talcott, Inc., a factoring firm, issued a statement hailing the shortening of selling terms as "a brave move" that will improve the profit situation in the synthetic fabric industry at mill and converter levels.

Fabric House Imposes Sample Charge

One important converting house, a member of TDI, has imposed a charge of ten cents a yard for sample cuts. This company provided the cost analysis of cutting samples published on this page in our April issue. In imposing the charge, the company issued the following bulletin to its salesmen:

"We have been considering for some time establishing an additional charge for sample cuts. We have calculated that our cost of cutting, packaging, invoicing and shipping a sample cut is $1.97. This is about 25¢ per yard for the average four yard cut. We don't propose to ask our customers to pay this entire cost, but we think it only fair that we ask them to pay some portion of this additional expense. We know that some other companies in our industry are charging either 10¢ a yard extra for cuts, or a special charge of 35¢ or 50¢ per package for delivery, or both."

Du Pont Gets Textured Yarn Patent

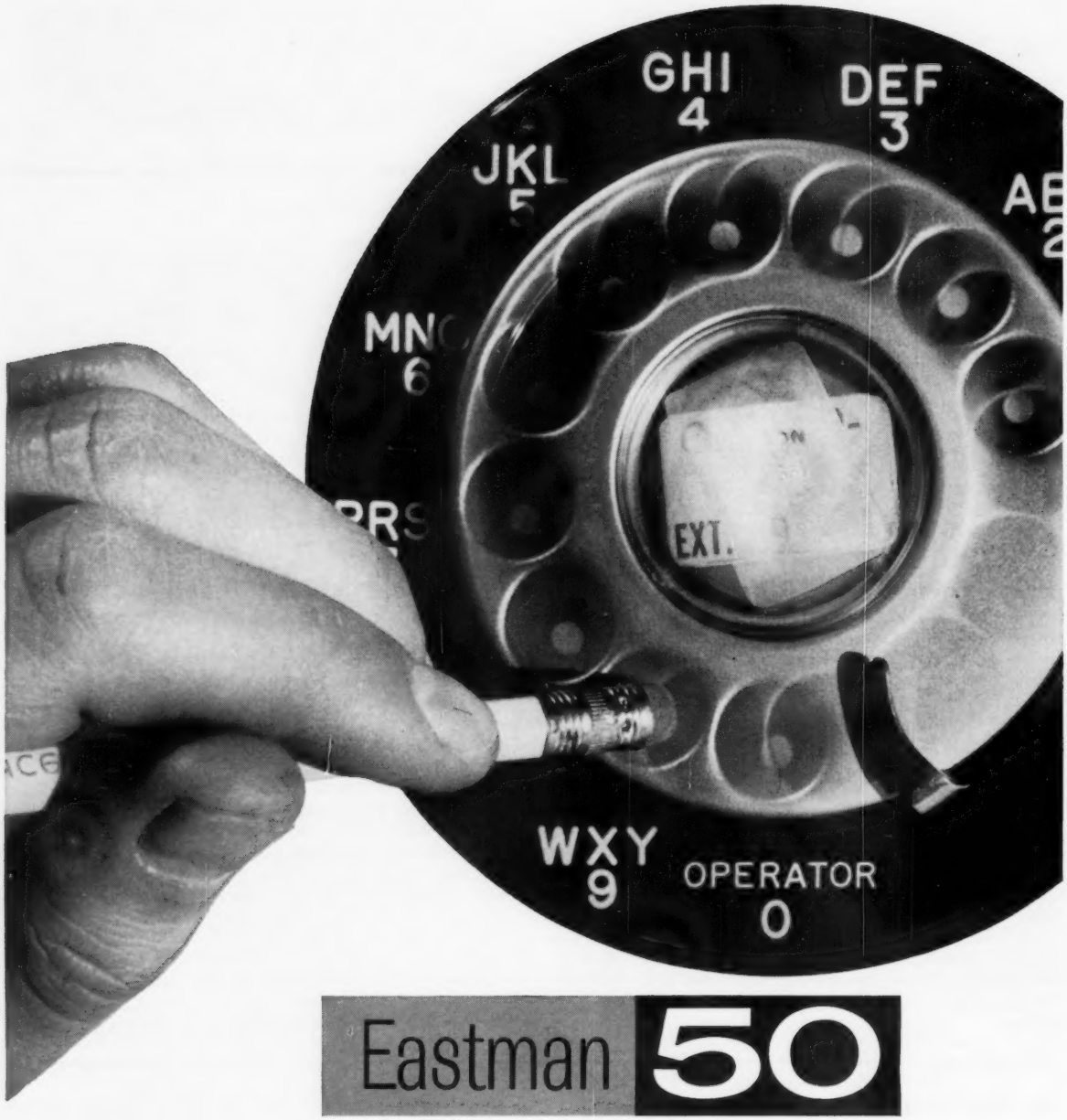
The Textile Fibers Department of the Du Pont Co. has been granted a patent covering textured yarns. The broad claims of the patent, designated U.S. Patent 2,783,609, encompass a wide range of bulky yarns with characteristics resulting from random loops in the individual filaments or fibers regardless of the method by which the loops have been introduced.

The yarn texturing process developed by Du Pont, which can be applied in some degree to almost any type of yarn to yield products "distinctly different from either spun or filament yarns," has already created interest in the textile industry. Some 50 yarn processors in the United States and abroad have been licensed to use it. Many of these licensees have also been licensed to use Du Pont's trademark, "Taslan," which designates textured yarns meeting quality standards established by Du Pont. Over 3,000,000 pounds of fiber have been processed to date.

The outstanding characteristic of "Taslan" textured yarns is that they differ from both continuous filament and spun yarns, yet combine some of the more desirable properties of both. These include strength and uniformity comparable to filament yarns with bulk and handle resembling spun yarns.

The loft, texture, and cover of "Taslan" permit opacity in fabrics without need for tight constructions or heavy yarns, opening the way to new concepts in functional, lightweight fabrics, according to Frank H. Coker who is in charge of its commercial development.

Du Pont's yarn texturing process can be accomplished on modified twisting equipment or on specially designed units. Two major textile machinery manufacturers are now supplying this equipment. The heart of the process is an air jet by which yarn is introduced through a needle into a compressed air stream in a venturi tube. Controlled changes in five process elements—air pressure, speed, twist, overfeed, and number of filaments—allow virtually limitless variation in hand, covering power, and appearance. Chemical properties and such physical properties as stress-strain characteristics normally remain unchanged.



Eastman 50

THE NEW IMPROVED ACETATE YARN

A busy number with mills and converters

Here's why: wherever you normally use acetate you'll get a fuller, richer look with Eastman 50. Try it and see. Crepes have a lush full-bodied hand . . . a resilience and drapability that are top news in fashion today. Taffetas have a rich feel and pearly luster they never had before. Satins take on new smoothness and body. One reason is the added covering power of Eastman 50 . . . from 5% to 10% more than regular acetate. Why not discover what this busy number can do for your line?

Eastman 50 comes in bright and dull luster Estron® and in Chromspun® black. Same deniers, twists, put-ups and price as regular Eastman acetate yarns. Ask your nearest Eastman representative.

EASTMAN CHEMICAL PRODUCTS, INC., SUBSIDIARY OF EASTMAN KODAK COMPANY, 260 MADISON AVENUE, NEW YORK 16, N.Y.

Erwin of Dan River

(Continued from Page 34)

and disorganize working staffs and production equipment. Rowe points out another and extremely valuable trait of Erwin as an executive: he has restored morale among management personnel and production workers and is keeping this restored morale at a high level.

Another key Dan River executive, Harry Ferguson, vice president for sales, speaking from the important vantage point of the New York sales office, says that Erwin, among other things, has put Dan River in a strong competitive position by lowering manufacturing costs substantially while upgrading the mill's output and giving far more style to Dan River's enormous range of fabrics—as a fancy goods operation, Dan River services over 8,000 accounts, Ferguson points out.

Alfred B. Emmert, Dan River vice president and director in charge of cotton procurement, says that Erwin has an unusual understanding of the complexities and the importance of cotton procurement which is a vital factor in the success of an enterprise of Dan River's magnitude.

A. B. Emmert

Mr. Emmert is a vice president and director of Dan River Mills in charge of cotton procurement. He thinks highly of William J. Erwin's understanding of the complexities of the cotton market

That Erwin understands the workings of the cotton market and the importance of buying the right kind of cotton at the right time is not surprising in view of his background. His first job after graduation by Clemson in 1921 was with a cotton operation, Consolidated Textile Corp. in Lynchburg, Va. He began there as a trainee working in the opening room and progressing in two years through all departments, learning by doing all the tasks connected with the mill's production of sheetings for industrial uses.

He stayed with Consolidated as assistant superintendent until 1927 when he went to Shelby, N. C., as manager of Ella Mill, an outfit with 11,000 spindles and 300 looms specializing in carded print goods and broadcloths. In those days, Erwin recalls, Ella, like other textile mills, was on a 12 hour day with two shifts operating. He went to work at 6 a.m. and stayed on duty until the shift change at 6 p.m. With five hours more on Saturdays, he worked at least 60 hours a week along with the mill hands. On Saturday afternoons and all day Sundays, the mill was shut down tight.

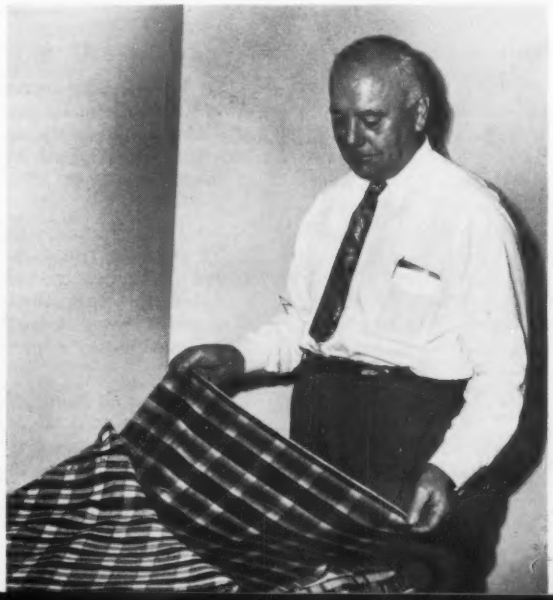
Malcolm A. Cross

Mr. Cross is Dan River's director of industrial and public relations

Erwin's next move toward greater responsibility and enriched experience in textile manufacturing came in 1929 when he was 29 years old. He accepted a job as assistant to George M. Wright, president of Republic Mills in Great Falls, S. C. Erwin's duties were broadly defined: he was to assist in manufacturing, merchandising and in shaping all policy for the company. Republic operated three mills with a total of 83,000 spindles and 2,500 looms. Output was diversified; the company produced print cloths, carded broadcloths, filament rayon goods, yarn-dyed shirtings and dress fabrics.

At Republic, Erwin was subjected to an intensely broadening experience as a textile executive. His job there meant that he had passed beyond the level of mill supervision which had been his primary work at Ella. He now began to function close to the top level of textile management, learning the complexities of coordinating production with marketing, and learning the difficulties involved in making the right management decisions.

He also began to learn at first hand how the New York textile market functions. His duties brought him frequently to New York to participate in the



Harley Y. Jennings

Dr. Jennings is director of research at Dan River. He reports directly to President Erwin

TWO VIEWS OF DAN RIVER'S DANVILLE, VA., OPERATION—On the left is the Schoolfield Division on the outskirts of Danville. On the right is the Riverside Division on both sides of the Dan River

work of selling Republic's output. These trips put him in touch with a widening circle of textile people through his business associations with J. P. Stevens who sold Republic's colored yarn fabrics and Cannon who sold its gray cloth. In 1938, Erwin's good work for Republic was recognized when the company made him a vice president and director. In 1946, Stevens bought Republic, and Erwin was made chief executive officer in charge of the Republic group of mills, and a vice president of J. P. Stevens.

Erwin remained with Stevens until 1949 when he accepted an attractive offer to join Riegel Textile Corp. as a vice president and director serving as general manager of Riegel's big Ware Shoals, S. C. division. Ware Shoals was another important chapter in Erwin's education as a textile executive. The plant is a highly diversified one turning out a variety of fabrics including spun rayons, diaper fabrics, carded garbardines and poplins. There is a large print cloth operation and a big sewing department fabricating diapers, crib sheets, pillow cases. In addition to cloth manufacturing, Ware Shoals has large rayon and cotton finishing plants.

With his four years of experience managing so big and complex an operation as Ware Shoals, Erwin was equipped to step easily into the big job of running Dan River with the fortunate results already reported in this article.

As for the future, William Erwin is confident that Dan River, by its combination with Iselin-Jefferson and its group of mills has put itself into a strong position as a profit-earning operation. The great advantage of the combination, as Erwin sees it, is that Dan River is now a broadly diversified operation no longer confined to fancy colored yard goods. Woodside Mills, for instance, produces print cloths, synthetics and tricot fabrics. Anchor Rome's principal products are decorative, industrial and upholstery fabrics. At Alabama's seven plants, the output at present is mainly corduroys, denims, gabardines, decorative fabrics, hickory stripes, ticking and twills.

This wide range of products, backed by broad production skill and experience, permits Dan River to operate with profitable flexibility and diversification in the market today, Erwin feels. Of equal importance, it will allow the company to add a variety of new products, perhaps in the area of synthetics and blends, if the trend in the market suggests such a course will be profitable.

For the textile industry as a whole, Erwin's long-range view is strongly optimistic. For a time, he believes, the going may be rough. Poor business may clean away many marginal mill operations, leaving the stronger survivors in a better position to earn profits. But the growth of the country, its increasing population and rising living standards insure an expanding demand for textile products, Erwin points out.

One of the most urgent problems in textiles right now, Erwin says, is the scarcity of good men for the higher levels of management. Right now, he points out, the textile industry needs scores of men able to take over responsibilities at the highest level of management. Although he would be the last man to say this, what the textile industry needs is a few more Bill Erwins.

Italian Polyamide Now Available in U. S.

Rilsan, a new polyamide textile fiber, is now being sold in the United States by Snia Viscosa, the Italian man-made fiber producer with headquarters in Milan. Fabrics made of Rilsan were displayed last month at the U. S. World Trade Fair at the Coliseum in New York City.

Rilsan is a polymeric resin derived from castor oil and is said to be suitable for both textile fiber and plastic uses. It was developed in France by the Organico Co. and Snia Viscosa working together. Snia describes Rilsan as a nylon—it is sometimes referred to as nylon 11 to distinguish it from nylon 6 and nylon 66.

The fiber has a density of 1.04 and a melt point of 190°C. The steam setting temperature is said to be 125-130°C. Fabrics made with Rilsan are claimed to have a softer hand than nylon. Rilsan is available in continuous filament and staple fiber form and has been woven and knitted successfully into a wide range of apparel fabrics. It is also being used in stretch yarns.

Snia Viscosa also displayed 13 other products at the Trade Fair which it will sell in the United States. These include a number of forms of rayon including solution-dyed and natural staple fiber and continuous filament rayon; acetate filament yarn; Merinova, a protein fiber; Visca, a rayon straw; and Lilion, a polyamide of the nylon 6 type.

Also shown was a high strength paper made with a loosely woven nylon fabric filled with resin. The material, Papertex, has been used for nautical maps and other heavy duty uses where strength and water resistance are needed in a paper.

Rilsan and other Snia products are distributed in the U. S. through Continental Synthetic Textiles, Inc., 350 Fifth Ave., New York City.

PAPERS OF THE
AMERICAN ASSOCIATION FOR TEXTILE TECHNOLOGY INC.

AATT

What's happening in knitting

Today's trends in outerwear

By Charles Reichman

Fibers and Yarns

Interfiber competition has intensified in the knitted outerwear industry. Although Du Pont's Orlon acrylic fiber is still the kingpin among the industry's fibers, its grip on first place position is not quite as firm as it was a year or two ago. One of the reasons for this is the mild comeback staged by wool. Another reason is that nylon, the industry's first non-cellulosic synthetic fiber, is back in the trade's good graces via the modified filament yarn route.

Orlon

In its utilization of Orlon the industry continues to favor high-bulk yarns, Turbo-processed for the medium and better-priced sweaters, and cotton system yarns from high and low shrink staple for moderately-priced and low-end sweaters. In contrast to two years ago, the industry today is using more diversified types of Orlon yarns with a resultant broadening of styling opportunities.

Until recently virtually all of the Orlon knitting yarns used in sweaters were based on 2 and 3 denier staple and tow. Today, the industry has a choice in addition to these, of 1.0, 4.5, 6 and 10 denier yarns as well as yarns combining varying proportions of these different deniers. Moreover, the industry for the first time now, as a result apparently of a change in Du Pont policy, has a selection of yarns in which Orlon is blended with other fibers, such as angora, cotton and Dupioni silk. The Orlon blend idea even encompasses spun rayon and triacetate.

Perfection of tow and skein dyeing techniques for high-bulk Orlon have also expanded sweater styling opportunities with the fiber. Both these developments now make possible the manufacture of multi-colored jacquard patterned ski and skating sweaters and novelty sweaters embodying intarsia effects and other types of multiple color treatments on collars and cuffs.

Other Spun Synthetics

Although the number of non-cellulosic synthetic fibers has grown, none of the older or newer spun synthetics has yet offered any effective competition to Orlon in the sweater field. Some progress looking to eventual utilization of competing fibers is however to be noted. Significant in this respect is Creslan, American Cyanamid Company's acrylic fiber, which has been undergoing field tests with purported promising results for sweaters. The fact that this fiber can be dyed with conventional wool dyestuffs is a factor of some appeal to knitters.

The industry also is following with interest the field market tests which sweaters of Darlan, B. F. Goodrich's dinitrile fiber, are currently undergoing. This fiber has been knitted into a shaggy-type sweater on a six cut links machine. Also of interest to the industry are the tests being undertaken with Dynel combined with Orlon in high-bulk jumbo rib stitch sweater constructions. One of the problems being encountered in making such rib bulkies is inability of the fabric to shrink up sufficiently to produce a uniformly closed stitch. Apparently addition of a small percent of Carbide & Carbon Co.'s Dynel, which has a higher shrinkage factor than Orlon, serves to overcome this problem.

As for the other synthetics in spun yarn constructions, Vicara continues in use in blends with other synthetic and natural fibers, while Acrilan has vir-

Charles Reichman

Editor of Knitted Outerwear Times, official publication of the National Knitted Outerwear Association, he is also instructor in knitting of the Evening Division, Fashion Institute of Technology. He is the author of numerous articles on knitting, yarn processing, dyeing and finishing. In addition to being a member of the American Association for Textile Technology, Reichman belongs to the American Association Textile Chemists and Colorists, and the Textile Institute.

Papers presented at April 3 meeting of The American Association for Textile Technology.

Sidney S. Korzenik, Executive Director and Counsel of Nat'l Knitted Outerwear Association who introduced the speaker and acted as moderator in the discussion.

tually disappeared from the sweater field and is being employed with considerable success in the sister field of fine gauge jersey yard goods.

Wool Current Status in Knitwear

Wool's position vis-a-vis Orlon is considerably more favorable than it was two years ago. There is no evidence, however, in the present state of wool's recovery that it will recoup more than a small segment of the ground which it had relinquished to Orlon and other synthetic fibers. As the tally checks out at this juncture, wool accounts for roughly 25 to 30% of the industry's total consumption of all fibers. While this is a somewhat anemic proportion in comparison to the plump 85% which wool not many years ago represented, it is 10 to 15% higher than the percentage eked out a year ago.

In specific sweater categories, the picture is somewhat rosier than the 25-30% total indicates. In men's sweaters, for example, the ratio of wool to other fibers is appreciably greater than in other classifications. This naturally is to be expected since the men's wear field has always been more firmly committed to the traditional fibers. The gains scored by wool in ladies' sweaters are, however, the more spectacular because it is in this field that synthetics, particularly Orlon, are entrenched.

Although a number of factors underlie wool's improved standing in the knitted outerwear trade, the following are chiefly at the basis of the fresh impetus which the fiber is receiving:

1. Popularity of fur blend sweaters.
2. Reappearance on the style scene of rib bulky knits.
3. Consumer objections to the pilling propensity of some synthetic fiber sweaters.
4. Void created in the moderately higher price brackets by successive cutbacks in prices of Orlon.

Of those four factors the fur blend development has probably been the most important wool stimulant. Wool is a major ingredient of these mixture yarns, representing in most cases 65% or better of the total blend composition, the other elements being nylon and such fur fibers as angora, raccoon, cony and even mink. Fur blend yarns are spun for the most part on the woolen system.

Modified Filament Yarns

Modified continuous filament yarns are today an important raw material of the knitted outerwear industry. These yarns last year represented about 5% of the industry's fiber consumption, and there is evidence that the proportion will be even greater this year. By the end of 1957, it is estimated that close to a million dozen ladies', misses', and juniors' sweaters will be knitted of modified continuous filament yarns.

Competition is intensifying in this field too. The trade's supply of modified filament yarns is no longer dominated by one particular process. Although Ban-Lon and Tycora are still the major yarn processes, knitters now have available at lower price a false twist yarn developed by Heberlein licensees and promoted under the name of Helanca Type SW. In a few months still another false twist yarn, based on a new machine development of the Universal Winding Co., will receive an extensive trade tryout.

As in the case of Orlon, there is now greater diversification in modified filament yarns. Ban-Lon is chiefly a smooth type yarn. Helanca Type SW is crepey in texture. Tycora comes in a smooth and newer chenille form. Nylon is of course the basis of most of these yarns but it is expected that at least one other non-cellulosic filament, Du Pont's Dacron, polyester fiber, may soon be employed. Another avenue which is being explored is with such nylon 6 yarns as Caprolan and Enkalon in 100% form or combined with nylon 66 for striking cross-dye effects.

Ban-Lon and Tycora are being used extensively on full-fashioned, circular jersey and interlock machines. For full-fashioned knitting 5/70/34 yarn is favored for 21 gauge work; 4/70/34 for 12, and 14 cut circular jersey and 2/70/34 for interlock. Use of Helanca Type SW in full-fashioned knitting is not as advanced as in circular jersey knitting. In the latter field 2/200/68 yarn is used on 12 and 14 cut equipment. The yarn, however, can be supplied in such other basic sizes as 4/100/68, 5/70/68 and 4/70/68.

Recent Knitting Machinery Developments

Recent developments in outerwear knitting equipment center for the most part on machines, mechanisms and attachments to enable the industry to capitalize on new burgeoning style trends in both the cut-and-sew and full-fashioned sweater fields. The developments, therefore, cut across every equipment area including V-bed flat machinery, circular garment-producing equipment and Cotton's Patent full-fashioned machinery.

V-Bed Flat Machinery

At one time in serious danger of being relegated to the industry's scrap head, the V-type latch needle machine is again an important factor in the knitted outerwear industry's technology. The impetus for its revival has come chiefly from the meteoric growth of full-fashioned knitting. Almost overnight, this development has created a demand for relatively fine gauge flat units on which to produce rib collars, sleeve cuffs and waist bands.

Present demand for flat equipment is being further stimulated by the sudden ascent into the fashion limelight of bulky knits. For the manufacture of these jumbo stitch garments, the demand is for coarse cut units in the range of 3½, 4 and 5 needles per inch. For full-fashioned knitting, the need is for 10 to 14 cut machines. Most of the trade's demand for V-bed flat machinery is being satisfied by imports from

abroad, chiefly from Germany and Switzerland. Improvements in this type of equipment have been in the direction chiefly of greater needle selection to permit more intricate stitch effects.

Circular Garment-Producing Machinery

Advances in the circular knitting machinery field have been mainly in the area of higher productivity through increased feeds. Probably the most significant development has been the introduction of a garment-producing interlock machine possessing an output rate of astonishing proportions—four dozen long sleeve cardigans an hour. This development, known as the Philip machine, is amazing in its simplicity, for it represents merely the conversion of a regular 32 feed 30 inch interlock yard goods machine into one capable of producing complete stitch-shaped sweater bodies and sleeves with knit-on rib trims.

The conversion is effected by means of an ingenious movable carrier at each of the odd knitting feeds. Appearance of this machine has spurred the traditional builders of interlock and jersey garment-producing machines to step up considerably the rate of production of their machines. The bulky rib knit trend has also prompted improvements in circular links equipment, so that the coarse constructions producible on V-bed flats, flat-bed links and brass ring ribbers can be duplicated.

Aside from the interlock and links developments just cited, improvements in the circular equipment area have been concerned with the fastest-growing branch of the knitted yardgoods field—the manufacture of high pile fabrics. The great bulk of knitted high-pile fabric is today being produced via the sliver and backing yarn knitting technique. Recently there were introduced, both here and in Britain, circular units based on the high-loop and ground yarn knitting principle. Although no comparisons of relative fabric quality can yet be made, the significance of these two new high-pile fabric knitting machines rests in their claimed high rates of productivity. Stacked against the sliver knitting machines, the two high-loop circular units are claimed to be two to three times more productive. If fabric quality is comparable, these two machines can bring far-reaching competitive changes in the high-pile fabric field.

Another interesting development in circular machinery is this: the re-appearance of the knitted swim suit in the lines of leading swim-suit makers, has stimulated circular knitting equipment builders to re-study machine models capable of handling elastic yarn on either a lay-in or knit-in basis.

Full-Fashioned Outerwear

Full-fashioned knitting is today a major branch of the sweater industry. Two years ago there were about 60 mills active in this section producing less than 5% of total sweater output. Today there are well over 100 mills in the field with an excess of 450 machines in place. Their output now runs into well over one million dozen. The vast majority of mills are concentrated here in the East with the greatest number in Pennsylvania, New Jersey and New York, in that order. The South, which two years ago had no more than three mills, is rapidly gaining as a full-fashioned sweater manufacturing center. There are now in the South, 11 full-fashioned mills with still further growth indicated. Another area in which full-fashioned knitting has been growing at a phenomenal rate is Puerto Rico. At present on the island are 17 full-fashioned sweater mills with five more due to be set up before the year is out.

Robert D. McCabe, President of the Underwear Institute who introduced the speaker on the underwear industry.

Most of the full-fashioned machines in place in outerwear mills are 21 gauge machines for still finer work and 15 and 18 gauge machines for men's sweater production. The development of the bulky rib trend has, however, prompted some of the full-fashioned machine builders to develop six and nine gauge equipment. It is significant, too, that efforts at producing full-fashioned outerwear machines in gauges closer to the hosiery ranges are also under study for use with extra fine counts of Lisle yarn, silk and 1.0 denier Orlon. These machines are in the neighborhood of 45 guage.

Also under evaluation by pace-setting full-fashioned knitters is use of Cotton's Patent rib frames in place of V-bed latch needle machines for manufacture of rib trims. Although in terms of stitch versatility the Cotton's Patent rib frame is hardly equal to the V-bed latch needle machine, its chief attractive feature is that it would make possible a more uniform garment, since all parts of the sweater would be knitted with spring beard needles.

Use of the Cotton's Patent rib machine in place of the V-bed flat machine, however, offers no solution to the problem of separate knitting of rib trims. Not until this problem is licked, will significant strides be made in stepping-up and making more efficient full-fashioned sweater manufacture. That the solution to this problem may not be too far off is indicated by the current work being done in this direction under the guidance of one of the industry's leading machine technicians. If a machine capable of knitting both jersey and rib on a full-fashioned basis is developed. there is no question that it would have far-reaching consequences not only on the full-fashioned section of the industry but on the larger cut-and-sew branch as well.

Anderson Heads AATT Appalachian Group

Fred E. Anderson of North American Rayon Corp. was elected Chairman of the Appalachian Chapter of the American Association of Textile Technologists at a meeting in Kingsport, Tenn. in March.

About 80 persons attended the session from a three-state area. Gerard K. Lake, president of the AATT presented the organizational charter to the Appalachian Chapter, which is the first regional group of the parent organization.

(Continued on Page 87)

What's happening in knitting

Upgrading underwear fabrics

By Oliver B. Beckwith

IN THE MANUFACTURE of knitted underwear and sleepwear the principal source of dollar losses from substandard quality and the principal reason for customer returns is defects in the knitted fabric. While finished garment quality is obviously affected by workmanship and sewing, such defects can generally be repaired when caught by inspection. Garments containing fabric defects cannot and must be classed as seconds. The frequency with which defects occur in knitting inevitably results in a proportion of garments getting by inspection and into the hands of consumers as perfect goods. The operation of knitting, then, is the most profitable place for the knitted underwear and sleepwear manufacturer to concentrate his quality control and improvement efforts.

Defects in circular knitting of cotton underwear and sleepwear fabric arise from two general sources: (1) the yarn used; (2) the knitting machine. It can be said that a third source is the knitting machine operator; however, it might be more precise to state that operator-caused defects are those arising from yarn or machine which were not promptly recognized and corrected, because of inattentiveness or carelessness of the operator.

Quality control and quality improvement in knitting requires quality control of the yarn used. A sound system for the acceptance or rejection of lots of yarn is necessary. Standards for the properties of yarn known to affect knitting must be established and test methods for determining these properties must be developed. Unfortunately, too little is known as to the properties in a cotton yarn which affect knitting performance. Consequently, in the beginning, conventional tests such as weight, strength and twist are employed. However, one of the important results of a sound quality control program in knitting, is to reveal the properties of yarn affecting the occurrence of defects in knitting. Effort is then spent in test method development.

Oliver B. Beckwith

Mr. Beckwith is director of quality control for the William Carter Co., Needham Heights, Mass. He is a graduate of New York University with the degree of B.S. in industrial engineering. Before coming to Carter, Mr. Beckwith was a senior research associate at Fabric Research Laboratories, Inc. Earlier he was connected with Alexander Smith Inc., as chief of the company's product engineering laboratories.

The knitting room, where there may be several hundred machines of various makes, producing 20 or more fabrics in 10 or more widths, presents a challenging sampling problem. One hundred percent inspection of circular knit rolls is not generally practiced by the underwear manufacturer, as the economy in doing so has not yet been demonstrated. Therefore, sampling inspection is employed. The quality control engineer is faced with the problem of designing a sampling plan, easy to administer, which will be a function of both volume and quality level of the fabrics being produced.

Inspection of rolls of knitted fabric must be standardized. Defects are defined and classified as: (1) holes arising from yarn or machine interaction; (2) defects arising from the machine, such as broken needle; (3) defects arising from yarn such as slubs, thin and heavy ends, etc. The use of punch cards for recording inspection data enables quick analysis of inspection results.

The presentation of inspection data must be done in such a way as to enable supervision to take effective corrective action or to show where research or development work must be undertaken. The setting up of quality standards and control charts is an effective means of doing this.

The continuing analysis of quality defects in knitting can show the importance of yarn in the generation of defects. When the same size of yarn made by different suppliers gives significantly different quality levels in one style of knitted fabric, study of yarn quality control data often times indicates the property in which the poor supplier is lacking. At the same time data is developed which indicates the best yarn construction for the best knitting performance.

Production experiments in the knitting room, for example, in the evaluation of experimental yarns, are essential to quality improvement. The techniques of design of experiments such as the Latin Square are most helpful in this.

Some advantages of a sound quality control program in the knitting room are:

(1) systematically shows knitting department supervision their quality performance; points out the fabrics where corrective action should be concentrated and pinpoints the sources of trouble.

(2) Enables quality improvement by the ability to rate suppliers of yarn in terms of the quality of fabric produced from their yarn. By eliminating poorest suppliers, the quality level is automatically improved.

(3) Enables quality improvement by showing the one best construction of yarn for a given construction of fabric.

(4) Enables the evaluation of quality performance by make of knitting machine. Thus, when purchase of new machines must be undertaken there is factual data available for a decision as to the make to buy.

(5) Enables supervision to rank knitting machine operators in terms of quality performance and shows those requiring corrective help. ■

What's happening in knitting

Improvements in hosiery knitting

By George A. Urlaub

NEWSPAPER reports and buyer's comments notwithstanding, there are two basic types of ladies' stockings in the market. For the past year or more, our trade papers have been playing up the importance of seamless nylons in market promotion stories, garnered from buyers and sellers alike. There is another type equally important to all concerned, namely, full fashioned. However, this being more plentiful than the demand for it at the moment, it is more or less taken for granted, or sometimes taken to get a quota of the shorter supply seamless goods.

There is no getting away from the fact that fine hosiery does something for the long stems of our American Beauties. Fine hosiery still carries with it the ultra quality we can get off the full fashioned machine. The fineness of the 60, 66, 72, and 75 gauges goes beyond that of the comparable seamless machines, but it is only quite recently that the proper yarns for these fine gauge machines have become available.

It must be remembered when making equivalent gauge comparisons, full fashioned to seamless, that the circular machine has a needle-ring of 11.78 inches for the average 3¾" cylinder, while the full fashioned machine has 14 or 14½ inches of needle-bar. Thus the latter has its gauge the same all the way down the stocking length, while the circular machine has it distorted, coarser in the welt and finer in the ankle, with the machine "gauge" only present in the area of the calf.

In connection with the automation of knitting machinery it is interesting to recall a U. S. patent issued on December 7, 1937. It was number 2,101,048, entitled "Uninterrupted Knitting of Shaped Fabrics" and it was issued to A. E. Ischinger, for Textile Machine Works. It contains 170 sheets of drawings which number 346 in all, and it has 146 pages of specifications and claims, the latter numbering 250. It is for a hosiery knitting machine to eliminate manual operations and skill, for a continuous operation throughout the complete fabric knitting cycle "that is of practical design, efficient in its operation, and is capable of maximum production at minimum cost without sacrifice of quality."

Here is a "one-man" symphony orchestra and to my knowledge no music has ever been played by it. Today's newest model automatic full fashioned hosiery machines, as perfected as they are, are still a far cry from the "Ischinger patent" machine. Today's newest "Reading" hosiery machines, which have been operating for over a year now, are about as near as they can come to a fully automatic machine for hosiery. Just last month or so, Lieberknecht also announced their "non-stop automatic". Makers of both these machines claim their operation with one knitter for two machines.

The first four "Reading-100" automatic machines have been in operation for almost two years in the Berkshire mill. In the interval since its first showing, a number more of them have been built which incorporate still further automation. These are mostly in 60 gauge, with a few 75's in operation, in several mills here and some by hosiery producers of Europe.

The latest Reading-100 automatic is reported to be as near to the Ischinger machine as it is practical to achieve in production. This latest type has automatic friction-boxes, carrier alternation when making stretchies, and a flexible "universal" narrowing head in addition to the welt-turning mechanism. It is also expected that the company will have ready soon its new electric thread clipping device. A movie showing this machine in operation is expected to be released soon.

Karl Lieberknecht's new "Kalio automatic non-stop" machine is designed to run continuously at basic 100-course speed. In addition to automatic welt-turning all frictions are automatically engaged and disengaged; all thread carriers are automatically introduced and idled; the carrier-rod and narrowing spindles are motor-driven by a servo-motor and automatically re-set starting position with automatic positioning where required. In addition, an automatic size-changer eliminates the need for changing buttons or chain. It is said that with the elimination of so many manual operations on the Kalio, two of these machines can be operated by one knitter without the necessity of a helper.

We have had automation for some time on full fashioned hosiery machines of the single-head and four-section types, but now it has been carried out even more fully on the newest models of 30 and 32-section machines. Schubert & Salzer have been reported to be building in Germany a 36-section 120-course machine, but details are lacking on this. We do not know yet what degree of automation is

Mr. Urlaub is an independent consultant to the knitting industry with which he has been associated since 1912 in all its branches, from yarns through machines, to products and marketing and with patents related to knitting. His background includes many years as a technical editor for knitting magazines, a large number of articles on various phases of textile materials, processes and products, and extensive service as a technical advisor to private industry and government.

George A. Urlaub

W. F. Williamson, President Nat'l Association of Hosiery Manufacturers who introduced the speaker on hosiery.

present on this or on the newest 40-section machines reported as being built in Europe. We recall a 40-section legger machine in operation about 20 years ago in the Arcadia mill at Lansdale, Pa.—made out of two 20-section machines coupled end-to-end. "Long-section" and "short-section" machines are practical up to a certain point, after which the law of diminishing returns becomes effective.

While on the subject of the automatic full fashioned machines, we recall the Wildman single-head machines capable of being operated by women knitters. I think it is already known in the industry that this builder, who I think was the first to make and operate a 90-gauge machine, has discontinued building hosiery machines, including the Pigeon type 400-spring-needle machine reported to be building last year. Wildman will concentrate their full fashioned talents and facilities in making a single-head automatic sweater machine which will be seen at the show. Thus the Wildman 66 and 75 gauge machines will have to serve for a while yet.

Reiner, who has built two- and four-section fine gauge hosiery machines in the past, is also reported to have swung over to making four-section and longer sweater machines, and we see nothing new in hosiery machines from this builder. His 400-needle German-built machines, installed in a new American mill last year, did not work out satisfactorily and have since been returned to Germany.

Full-fashioned helps sweater industry

Speaking of full fashioned machines, the hosiery industry has contributed much during the past few years toward making possible the revolution which has taken place in the knitted outerwear industry. I refer to the quick transition to an American full fashioned sweater industry. There is no doubt that the availability of the frames, bed-plates, rails, shafts, etc., of the older model coarse-gauge hosiery machines, enabled the machine shops, who previously did re-gaging work or built attachments for cotton-type frames, to convert them easily into sweater machines. Then also many of their jigs, etc., were already set up for 45 ga. or 30 n.p.i., which quite readily changed to half the gauge, or 15 n.p.i., as found in many of the 21 gauge sweater machines. And now some of them are again "halving" the gauge to get 7½ n.p.i. on which to make "Shetland" type sweaters automatically to overcome the lost production of the hand machine operators.

One thing which long stood in the way of other builders making "fine gauge" nylon circular machines was the patent control which Scott & Williams had over the automatic welt set-up and transfer, known as the "K" type. Since expiration of these patents, others, from Fidelity on down, are now able to offer a machine incorporating the necessary knitted-in turned welt. Domestic machine production facilities were not able to cope with the market demands for bare-leg type stockings and thus we have had an influx of so many foreign make 400's. Some have come to stay and some have gone back to their makers.

K type machines

Among these other "K" type 400's which were either installed in mills or offered in the American market we find the following makes: Fidelity, Hemphill, Carolina, Crawford, Booton, Chell, Santoni and Reiner's machine. Another new one to be exhibited at the Knitting Arts Show is the Staroba, Model "MD-400" which comes to us by way of Canada.

Scott & Williams' recent "seam-free" machine developments include: a new stocking length control on their Model KN and a new loose-course positioning. The former is actuated by the amount of yarn drawn in by the sinkers. This produces a more uniform fabric with a plus or minus tolerance of ¼ inch in the overall stocking length. The second, is their new loose-course device which positions the looping course in the toe four courses away from the gore end, for easier and more positive looping work.

Bentley's English made K type machine has a brush-tension device mounted above and below the needles to eliminate stitch distortion due to yarn tension differences.

Fidelity's "electronic 400" has had a new automatic device added to insure uniform tension regardless of knitting speed. We have not heard much lately of Hemphill's 400 machine, and we do not know whether it is in production at this time. However, judging from the activity at the last Knitting Arts Show, this machine is overdue for market development.

The newest "Carolina 500" has an overlapping feed when changing from single to double-feed to overcome pin-holes, vacuum-type take-up and an electric stop-motion.

Crawford's model MF-400 was reported during the past several months to be in production, but no information is available regarding its showing at Atlantic City this year. Some features claimed for this machine are two-feed knitting from makeup to pressoff, with use of only one length of needle butt. A 474 is also reported to be in production.

The Santoni, Italian-made machines have no fabric take-up but the dial drive is disconnected when the dial is out of action. This maker is also reported to have started production of a 516-needle machine.

Booton's English made 400's have been improved by addition of automatic take-up on the inturned welt.

Nearly all the current models of 400's have on them a device to overcome variations of yarn tension to facilitate uniform feed to the needles for production of fabric evenness and clarity. In addition most of

them have also been adapted to run as two-feed machines for stretch hosiery production.

Men's and children's hosiery

In men's and children's hosiery, the new machine developments parallel more or less those at the last show, some of which were quite interesting.

The Reading CK-A men's machine should prove very interesting as this is the Textile Machine Works' version of the Coile Argyle machine they acquired some time ago. This is an unusual type of self-contained and compact unit. It has all drives, drums, controllers, and up to 8 pattern drums, arranged vertically and at several separate levels.

It is expected that Banner will also show their diamond-sock and Argyle machines. These would include their vari-inlaid-pattern; overplaid with crossed color; a new keen-edged solid color pattern; and the recently developed fine gauge anklet machine with automatic transfer 2x2 ribbed cuffs.

Crawford has developed a further range of pattern possibilities on their "Mosaic" pattern machine, and will show two of them. These machines were originally developed for inlaid color diamond-socks.

Incidentally, this term "Argyle" is much abused in the trade. Not every diagonal or diamond pattern sock is an "Argyle". Originally, it was an authentic pattern and colors of a Clan of Scotland. This pattern, I believe, was first made on hand frames in the Munro mill of Edinboro. Many so-called "argyles" are really "diamond socks" of solid color intarsia work, while others are cheap imitations of reverse plated patterns of these and the overplaid 2 and 3-color patterns.

Tricoma will show the newest Italian-built Moncensia "Tri-Color" 3-feed, multi-pattern jacquard machine for men's and children's half hose with elasticized 1x1 rib top.

Scott & Williams have just come out with their "Most-in-one" double float attachment on their Komet links machine. This produces ribs, links, patterns, jacquards and 1x1 rib, all off a single drum. All patterning is on the bottom cylinder. A new reverse cuff picot attachment for infants' Komet goods has also just been announced. In addition, two new ETR machines with rubber "interlace" and cushion soles have also been developed for children's ribs and anklets.

The "Mor-Pul" machine has come into the market during the past year. This is particularly adapted for rubber top goods and bulky double and triple cuffs on bobbysocks. Edley will show its Model RSVP, making a variety of patterns in men's tennis socks, boys' and misses' ribbed numbers. The conventional Mor-Pul machine for the regular Mor-Pul construction will be shown for the first time.

Fidelity has announced their Model ATR for the show. This is an automatically transferred rib-top machine, which incorporates their yarn selector and knot tyer for up to 10 ends. The machine is made in sizes from 2¾″ up.

Auxiliary machinery for boarding, inspecting, ticketing, and packaging has undergone numerous changes since the last show, which was the first time some of this type of machinery was exhibited to the trade. Here the emphasis has again been on automation to carry the work up to and away from the operator to increase the per-man-hour output of that production station. All of these attempts also produce more first quality products, commensurate with the reduced handling and smoother work flow.

In addition, quality control has been given further lifts by development of testing devices to enable mills to coordinate and set machines and sections to produce more uniform output of a given style. The Marvel Meter and the Volumet devices are among the recent types here for hosiery.

In the dyeing and finishing sections, we also have some reports that are interesting. The industry has been watching for some time attempts to build machines for scouring, dyeing, setting and finishing nylon hosiery in one continuous operation without the handlings and rehandlings as under the present system. Logically this could only be carried out in a closed chamber such as we have not had before. Two machines resulted from these efforts. One is the Proctor & Schwartz "Electrocolorset" and the other the "Dyotherm" built by Turbo.

Much work has been done on these machines since their announcement at the last show. The first Proctor machine, an improved model of larger capacity, is now going into a large seamless mill for production testing. We do not have any information on the Dyotherm machine, so we must assume that it is coming along after initial installation last year. Both of these machines represent departures of techniques and chemicals from those generally used.

In addition to dyeing, there have been developed some interesting finishes. Among these are the "Lanolized" finish for ladies nylon hose, for better hand, softness and "feel" when worn. Besides the regular finishes for hand, anti-snag and other effects, we have recently seen a revival of the "Germanized" idea of several years ago. We refer to the introduction of the "Sanitized" and the "Dur-a-Septic" finishes put on hosiery to inhibit bacteria formation and growth for hygienic results. Then it is also reported that some mills are experimenting with silicones as a finish for abrasion resistance.

New developments in yarns

In yarns there are also a number of interesting developments. The old standbys, cotton, wool and the rayons, are being blended with some of the newer man-made fibers for unusual effects. At the recent meeting of the Textile Research Institute, a symposium covered synthetics from A to Z, from Acrilan to Zefran, with several in between, that can be of interest in hosiery. Many of these later-day yarns are still to be developed in hosiery constructions. Some have appeal by themselves and some in combination with another fiber of regular or bulky type.

In nylon, stretch yarns are a considerable factor, although they have leveled off somewhat and are not progressing as fast as when they first hit the market. They are principally used in men's half hose, despite early poor market results of the small one-size sock constructions, which have since been modified. Children's stretch anklets are equally big in volume.

Women's stretch types are usually in 15 denier. The patent owners of this type are pushing women's goods quite hard, but this type still has to find a big place in the market. Stretch yarn is also used in the afterwelt to get added thigh comfort in regular nylon stockings. The use of two fine ends in the main feed has increased considerably of late, and this technique bears promise of becoming a market significance in non-stretch constructions.

Except for the addition of more solution-dyed fiber, the rayons and acetates have stayed pretty much constant. Some of these new yarns have good prospect in ingrain goods, while others may prove interesting in

(Continued on Page 85)

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yarn dyed by
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. . . in bright, sparkling,
lasting colors that give an extra
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For superior knitting qualities, insist on Orlon, yarn-dyed by Globe.

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Yarns we process include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan—Dacron—Orlon.

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For the DYER and FINISHER

Nonionic Wetting Agent

A new 100% active nonionic wetting agent and detergent with unusually low foaming properties has been announced by Rohm & Haas Co. Marketed under the name of Triton CF-21, and recommended for many textile wet processing operations, the surfactant is priced in bulk at 32½ cents a pound, f.o.b. Philadelphia; truckload of drums, 34½ cents; less than truckload of drums, 35½ cents, and less than drums, 45½ cents.

'First Lady Yellow'

The Color Association of the United States has announced the color of the gown worn by Mrs. Dwight D. Eisenhower at the January Inaugural Ball, and has named it "First Lady Yellow." The citron yellow shade is expected to repeat the marked success of "First Lady Pink," presented by the association four years ago.

Lanasyn Brown Colorant

Literature describing its Lanasyn Brown 2RL is now available from the manufacturer, Sandoz Chemical Works, Inc., New York City. The new Sandoz premetallized colorant for the neutral dyeing of wool or nylon is said to have superior fastness to light and to decatizing.

'Chlorophobic' Finish

Development of a new, durable "Chlorophobic" finish which imparts to natural-look fabrics, especially white, important minimum care features, has been announced by Joseph Bancroft & Sons Co., Wilmington, Del. The finish also is reported to have the ability to withstand possible damage from chlorine retention when exposed to hypochlorite bleaches. Patent protection has been obtained on the chemicals and the process. Textiles produced by the process will be marketed under the trade name "Keetide," and will form a new group in the firm's family of "Everglaze" fabrics.

Defoaming Latex Coating

The foam that is produced in mixing, handling and applying acrylic, styrene-butadiene and other synthetic lattices, which are used extensively in coating textiles, can be kept to a minimum by the addition of its new specific defoamer, "Foamex," according to Glyco Products Co., Inc., New York City. Foaming produces inequalities and defects in the finish of such coated textiles.

Procion Dye Demand

Arnold, Hoffman & Co., Inc., Providence, R. I., has announced plans to set up a plant to manufacture Procion dyes at Dighton, Mass. Arnold, Hoffman presently distributes Procions, manufactured by I.C.I., and will continue to do so until the new Dighton plant is in full production.

Copies of the firm's new bulletin, "AHCO Technical Bulletin No. 133," which details pertinent data concerning its Lubrol WX, a nonionic surface active agent, are available on request.

Cibanone Yellow Paste

Cibanone yellow LGR paste, a new Ciba specialty, is said to yield vat dyeings of a golden yellow shade with good all-round fastness and remarkably good light fastness in particular, according to the Ciba Co., Inc. Microfined physical properties of this new dye are claimed to promote level dyeing, uniform shade control and best results in pigment application.

List Textile Chemicals

The Textile Chemicals Department of Rohm & Haas, Philadelphia, Pa., has available for distribution its revised booklet, T25c, dated January 1957. The booklet contains a list of the various chemicals manufactured by the company for the textile industry.

High Temperature Dyeing

American Cyanamid Co. has released a new booklet on dyeing textile fibers at high temperatures. Written by Ralph Stanziola and Dr. Fred Fordemwalt, of the company's research division, the dye technical bulletin entitled "The High-Temperature Dyeometer," can be obtained by writing to the editors.

Thermo-Setting Resins

Acquisition of a two-story stone building for the manufacture of thermo-setting resins for the textile industry has been announced by Dexter Chemical Corp. The building in The Bronx, N. Y., adjoins Dexter's production and office facilities at 819-45 Edgewater Road. Operations at the new plant are expected to start about September 1.

New Eastman Dyes

Eastman Chemical Products, Inc., has added two new dyes to its series for polyester fibers—Eastman Polyester Yellow RL and Eastman Polyester Dark Red FL. The addition of these colors brings the total number of dyes in this series to 12. A number of other new polyester dyes is being developed and their announcement is expected shortly.

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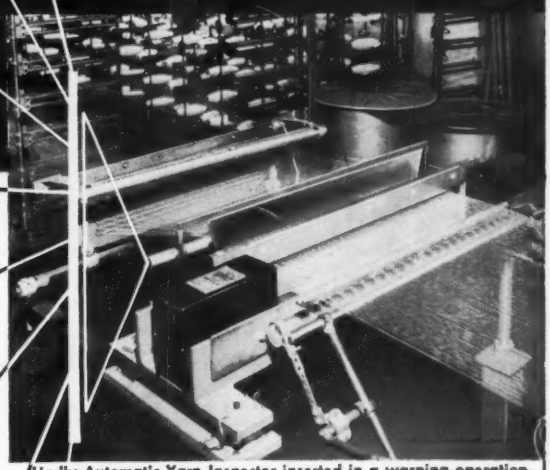
Lindly *automatic* yarn inspector

guarantees the relative quality of warped yarn for warp knitted cloth or woven cloth fabrics by establishing **The Lindly Count.**

Accurately and economically, the Lindly Automatic Yarn Inspector detects yarn faults. Similarly, it sets up a count or stop motion on those faults that are larger than your operation will permit.

YOU DETERMINE QUALITY . . . AND YOU CAN STATE THAT QUALITY IN TERMS OF **THE LINDLY COUNT.**



Lindly Automatic Yarn Inspector inserted in a warping operation.

OTHER FEATURES—Improve quality through controlled tension during warping . . . improve quality of finished woven or warp knitted fabrics . . . assure more even dyeing.

FOR FULL INFORMATION ON THE LINDLY AUTOMATIC YARN INSPECTOR, WRITE OR CALL FOR LITERATURE . . . AND USE THE LINDLY ADVISORY SERVICES WITHOUT OBLIGATION.

It Pays to Know The Lindly Count

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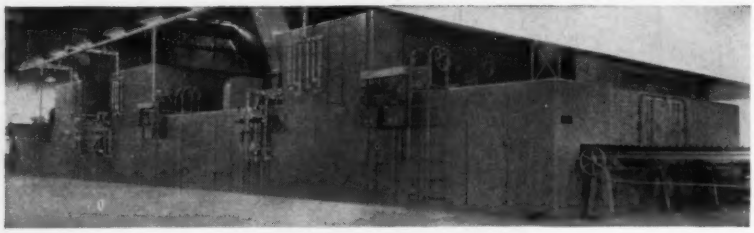
Tenter Housing Output UP 50 to 150%!



PROCTOR'S DUPLEX AIR CIRCULATION is the answer

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You cannot afford to overlook a machine that will pay for itself, out of savings, in two years, as shown in actual case histories. Ask for a Proctor engineer to go over your requirements, and judge for yourself the advantages to be gained by the use of this Tenter Housing.

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Manufacturers of Textile Machinery and Industrial Drying Equipment

Textile News Briefs

Botany Buys Knitting Firm

Botany Mills, Inc. has acquired Premier Knitting Co., Inc. and its affiliated companies, Botany's ninth acquisition since 1955. Previously acquired companies include: Moss-Gordin Lint Cleaner Co., Botany Cottons, Inc., Rolley, Inc., Glenoit Mills, Inc., Baltimore Luggage Co., Jos. H. Meyer Bros., Markson Bros., and Calvine Mills, Inc. There will be no change in the management or policies of the Premier operation as a result of the acquisition. Irving Saltzman will continue as board chairman an Arnold A. Saltzman will continue as president of Premier.

Enka Moves Office

American Enka Corp. have moved its offices to 530 Fifth Avenue. Most of the fabrics in draperies and upholstering throughout the new offices are made of Enka products and are contemporary in design.

Emery Acquires Lawrason

Emery Industries (Canada) Ltd., subsidiary of Emery Industries, Inc. has acquired the fatty acid business of S. F. Lawrason & Co., Ltd. The new company will produce lard oils, metal working compounds, textile chemicals and Sanitone dry cleaning compounds, as well as Emery's stearic, oleic, animal and vegetable fatty acids and glycerides. R. T. Hull has been appointed vice president and general manager of this Canadian subsidiary.

Whittall to Modernize

A $1,000,000 improvement program at its Whittall Division in Worcester, Mass., is planned by the Roxbury Carpet Co. The program involves both extensive remodelling and the installation of modern machinery. Acquired by Roxbury late in 1956, the Whittall Division manufactures carpets in the Wilton weave primarily.

Fowler Heads New Firm

William Max Fowler, former vice president and sales manager of the Palatine Dyeing Co., has been elected president and treasurer of the newly-formed Adirondack Finishing Corp., Johnstown, N. Y. The new firm has acquired a long-term lease of the Johnstown plant and equipment of the Triangle Processing Corp. Adirondack will maintain and operate a complete dyeing, finishing and processing business for all types of synthetic fibers.

New Saco-Lowell Sales

Saco-Lowell Shops has announced the purchase of Saco-Lowell equipment by Woodside Mills to modernize the opening and picking room at Woodside's Greenville, S. C. plant. La Marina S. A., Mexico City, Mexico, also has purchased Saco-Lowell Gwaltney spinning machinery for its plant.

More Acrylo Output

Acrylonitrile production for the second quarter of next year will be doubled at the Institute, W. Va., plant of Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp. The planned expansion in output reflects the increasing demand for acrylic fibers, high impact resins, Buna-N type rubber and new acrylonitrile derivatives.

Velveray to Expand

Velveray Corp. marked its 20th anniversary in the company's Passaic, N. J., plant by announcing plans to expand production by 30% in the next three years with new textile and vinyl plastic products. Velveray is one of the largest flock processors in the U. S. textile industry.

Metallic Staple Fiber

Increased use of aluminum yarn in a variety of fabrics has been predicted by Robert Lewis, textile market manager for Reynolds Metals Co., following the company's introduction of Reynolds aluminum yarn in staple form. Lewis asserted the new short-length fiber has been fully tested to meet market and textile weaving requirements and is now available in quantity to fabric and yarn manufacturers. Reynolds introduced aluminum yarn in the late 1930's to replace French gold and silver lamé.

"Fabric Defects" Reprinted

"Fabric Defects," by J. B. Goldberg, Consultant to the textile and allied industries, has been printed for the third time. This book describes case histories of imperfections in woven cotton and rayon fabrics. For the past year the book has been out of print but is available again for $6. For further information write directly to Mr. Goldberg at 11 West 42 St., New York 46, N. Y.

SEC Gets Roberts Data

Roberts Co., manufacturers of spinning frames and parts used in production of cotton and synthetic yarns, has filed a registration statement with the Securities and Exchange Commission in Washington seeking registration of 190,000 shares of $1 par common stock to be offered for public sale. 150,000 shares are to be offered for the

(Continued on Page 83)

In ancient Egypt, the religious belief that the body must be preserved intact after death to achieve eternal bliss led to the construction of massive tombs durable enough to protect the dead against evil spirits or marauders through ages of oblivion. The most famous of these, the three Great Pyramids of Gizeh, each covering approximately 13 acres and towering nearly 480 feet, remain today as indestructible symbols of the marvelous engineering skill and sheer perseverance of the Egyptians who built them forty centuries ago.

When it comes to longer-lasting protection for your thread guide, WALHARD Hard Chromium Plating is your answer. Outstanding workmanship and 20 years' experience exclusively on Hard Chromium back the WALHARD signature, guaranteeing you substantial savings in maintenance and down-time costs. Don't be satisfied with less than the best — specify WALHARD on your next Hard Chromium Plating order for polished or satin finished guides.

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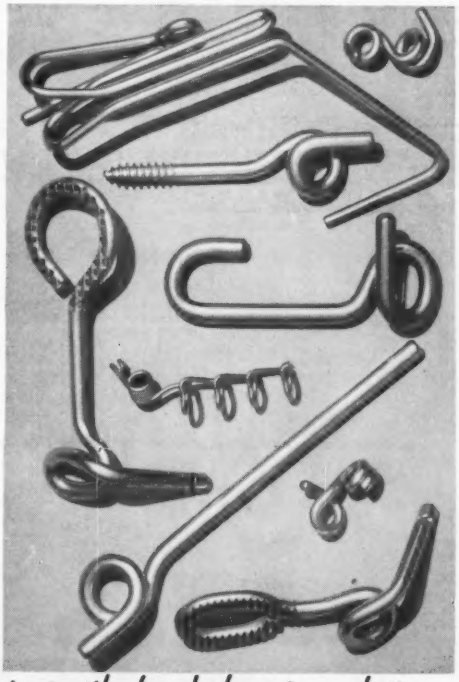

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The leading name in textile hard chromium plating

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U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in April, 1957. All prices are given as subject to change without notice.

RAYON FILAMENT YARN

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Twist Skeins	Twisted* Skeins & Cones	8½ Turns	High Twist Skeins & Cones 12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.24	1.50	....	....	....	1.72
65/45	1.14	1.30	....	$1.53	....	1.58
75/60**	1.04	1.18	....	1.41	$1.46	1.49
100/74**	.95	1.08	....	1.33	1.38	1.44
125/60	.94	1.05	$1.09	1.30	....	....
150/120	.93	1.02	1.12	1.27	....	....
300/225	....	.95	....	....	1.08	....

* Twist includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.
** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Twist Tubes	No Twist Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.00	1.00	....	....	....	....	....
65/45	1.05	....	....	....	....	$1.42	....
75/45*	.97	....	$1.08	$1.08	$1.31	1.31	$1.39
100/60*	.89	....	1.03	1.03	1.23	1.23	1.31
125/60	.84	....	.99	.99	....	....	....
150/90*	.77	....	.81	.81	1.15	1.15	1.24
150/120	.81	....	....	.93	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Twist Skeins	2½ Twist Cones*	5 Twist Skeins	5 Twist Cones*
1516	150/90	....	....	$1.45	$1.35
1517**	150/90	....	....	1.45	1.35
2000	200/120	....	....	1.06	.96
2025***	200/120	....	....	1.06	.96
3000	300/180	$1.10	$1.00	....	....
4000	400/224	1.10	1.00	....	....
6000	600/360	1.08	.98	....	....
8000	860/450	1.08	.98	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn on cones same as skein prices.
** Code 1517 can be run in warp or filling.
*** Code 2025—Softer than 2000.

CUPIONI Type B

Code	Den/Fil	No Twist Skeins	2½ Twist Cones	5 Twist Cones
9600	50/30	$1.39	....	$2.14
9640	70/45	1.29	$1.64	....
9656	100/60	....	1.48	....
1540	150/90	....	1.25	....
9710	200/120	....	1.20	....
9734	275/135	....	1.10	....
9790	450/225	....	1.10	....
9813	600/372	....	1.07	....

Spun Dyed Cupracolor Black 35¢ per lb. extra. This applies to all deniers.

Long Type A

Code	Den/Fil	2½ Twist Cones	5 Twist Cones
9686	150/135	$1.20	$1.25
9738	275/135	1.05	1.10
9780	450/372	1.05	1.10
9815	600/372	1.02	1.07
9826	900/372	.95	1.00
9876	1250/372	.95	1.00
9925	2500/744	.95	1.00

Modified Type C

Code	Den/Fil	5 Twist Cones
9662	100/60	$1.43
9688	150/120	1.25

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

American Enka Corp.

Current Prices
Effective December 4, 1956
Standard Quality Yarns

Standard Quality Rayon Yarns

A. Natural

Den./Fil.	Luster	Turns	Weaving Cones	Beams	Skeins Long	Skeins Short	Cakes	Knitting Cones
50/18	E	5 S						1.56
75/10	B	3 S&Z					1.08	
75/18	E	4 S						1.22
75/30	B	2.5,4S&Z	1.17	1.17			1.08	1.17
75/30	B	6 S	1.22			1.37		1.22
75/45	P,E	2.5, 4,5S&Z	1.17	1.17	1.23	1.37	1.08	1.17
75/60	B,P	3,4 Z	1.22				1.10	1.22
100/14	B,P	3 S&Z				1.12	.96	
100/40	B,E	12 S						1.27
100/40	B,P,E	4,5 S&Z					.96	1.04
100/40	B	6 S	1.10					
100/40,60	B,P	2.5,4S&Z	1.04	1.04	1.08	1.12	.96	1.04
100/60	E	2.5 S	1.06	1.06			.98	
125/40	E	3 Z						.96
150/40	B,P,E	2.1,3S&Z	.91	.91	.94	.99	.86	.90
150/40	B,E	5 S&Z	.91		.94	.99	.86	
150/40	B,E	8 S&Z	.97		1.00	1.05		
150/40	B,P	10 S&Z	1.03	1.03				
150/90	B,E	2.1 S&Z	.92	.92			.87	
200/40	P	3 Z						.82
200/40	B,P	8 S				.95		
250/60	P,E	2.4 Z						.75
300/50	B,E	3 S	.73	.73				
300/60,120	B,P,E	2.1 S&Z	.73	.73		.76	.71	.73
300/60	B	3.5 S	.73	.73		.76	.71	
300/60	B	4.3 S	.76	.76			.74	
300/60	B	7 S	.83					
300/40,120 H.T.	B	2.5, 3,4S	.75	.75				
450/80	B	3 S	.70	.70		.72	.68	
600/80,120	B,E	3 S	.69	.69			.67	
900/120	B	3.4 S	.68				.66	
900/120 H.T.	B	3.6 S	.70				.68	

"Jetspun" Colored Yarns

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams*	Cakes	Colors
100/40	Regular	2.5S	1.39	1.39		All
150/40	Regular	2.1S	1.26	1.26		All
200/40	Regular	8.3S	1.27			All
450/80	Regular	3.0S	1.05			All
300/40	High	3.4S	1.10	1.10		All
600/80	High	3.4S	1.06			All
900/120	High	3.4S	1.05	1.05		All

Registered trade mark of American Enka solution dyed rayon yarn.
* Single color.

American Viscose Corp.

Effective December 14, 1956

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams Tubes	Cakes
50	20	Bright & Dull	$	$1.59	$1.56	$1.45
60	10	Bright	....	....	1.41	1.30
75	10-30	Bright	1.24	1.20	1.17	1.08
75	30	Dull	....	....	1.17	1.08
100	14-40	Bright	1.12	1.07	1.04	.96
100	60	Dull	....	....	1.06	.98
150	24-40-60	Bright & Semi-Dull	.99	.94	.91	.86
150	40	Dull	....	....	.91	.86
150	90	Dull	....	....	.92	.87
200	10-44	Bright	.90	.85	.82	.78
250	60	Semi-Dull & Dull	.82	.78	.75	.73
300	44	Bright & Dull	.79	.76	.73	.71
300	234	Dull	....	....	.75	.73
450	100	Bright	....	.72	.70	.68
600	100	Bright	....	.71	.69	.67
900	60-100-150	Bright	....	.70	.68	.66
1200	75	Bright	....	.67	.65	....
2700	150	Bright	....	.70	.68	....

Extra Turns Per Inch

75	30	Bright 6-Turns	$1.36	$1.32	$1.29	$ ....
100	40	Bright 6-Turns	1.24	1.19	1.16	1.08
150	40	Bright 6-Turns	1.09	1.04	1.01	.96
300	15	Bright 5-Turns	....	....	.78	....
300	45	Bright 6-Turns	....	.86	.83	.81
600	30	Bright 5-Turns	....	.76	.74	.72

Rayflex Yarns

150	60	Rayflex	$	$	$ .94	$ .89
300	120	Rayflex	....	....	.75	.73
450	120	Rayflex	....	....	.72	.70
600	234	Rayflex	....	....	.71	.69
900	350	Rayflex	....	.72	.70	.68

account of the issuing company and 40,000 for selling stockholders. The company's finances are estimated at $760,000. According to SEC, Roberts Co. has outstanding 88,825 shares of $1 common stock and 257,375 shares of common stock, founders series, $1 par.

Personnel Changes

Proctor Appoints Whiteside

Fred S. Whiteside

Fred Whiteside Corp. has been appointed manufacturer's agent for Proctor & Schwartz, Inc. Whiteside will handle the sale of the Proctor air slasher dryer, the Proctor electrically heated laboratory dryer, the Proctor skein and swatch dryer, W-M strut, power exhauster, fin pipe, and metallic wire for cotton cards. These items are in addition to those promoted by the Proctor sales organization.

Proctor & Schwartz has announced that it plans to open a new plant at Waynesville, N. C. The plant will initially manufacture textile fiber processing machinery, and is later expected to advance into sheet metal work and the manufacture of drying equipment.

Samuel B. McFarlane has been appointed manager of the fiber research department of Celanese Corp. of America's Summit Research Laboratories. He is succeeded as laboratory manager by **Dr. Michael J. Curry.** Dr. Curry, in turn, is succeeded by **Bruce S. Ainsworth,** who is now manager of the chemical applications laboratories.

Dr. Colin L. Browne and **Dr. James D. Alexander** have joined the applications and product development department of Celanese. Dr. Browne is a textile development chemist and Dr. Alexander is a physicist.

George W. Felker, III has resigned from the vice presidency of Avondale Mills, Inc. to become a vice president of Riegel Textile Corp.

Warren M. Dewing has been appointed New England branch manager of General Aniline & Film Corp. for dyestuff sales. He succeeds **Wilfred A. Lord,** who has retired.

(Continued on Page 85)

. . . . . **STANLEY**

automatic door controls

for new or existing doors that swing, slide or fold

Mill doors operated *automatically* by Stanley Magic Door Controls stay open only the minimum time required to let traffic through. This prevents drafts or loss of humidity that could cause end breakage and . . . accumulation of waste . . . work stoppage . . . poor quality . . . lower production.

Write for your copy of our new booklet, "Plant Ideas to Make Efficiency Grow," to Magic Door Sales, Stanley Hardware, Division of The Stanley Works, Dept. E, 1535 Lake Street, New Britain, Conn.

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY

STANLEY

This famous trademark distinguishes over 20,000 quality products of The Stanley Works—hand and electric tools • drapery, industrial and builders hardware • door controls • aluminum windows • metal parts • coatings • steel and steel strapping—made in 24 Stanley plants in the United States, Canada, England and Germany

Thick and Thin Yarns

150	40-90	Bright & Dull	$	$	$1.15	$ ....
200	75	Bright & Dull	....	....	1.05	....
300	120	Bright & Dull	....	....	.95	....
450	100	Bright & Dull	....	....	.92	....
490	120	Bright & Dull	....	....	.95	....
900	350	Dull	....	....	1.00	....
920	120	Bright & Dull	....	....	1.00	....

Colorspun Yarns

Currently producing regular and high tenacity at premiums at $.35 per pound.

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Wooden Section Beams	55.00 each
Wooden Section Beam Crates	30.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.
Terms: Net 30 days.

Celanese Corp. of America

Current Prices
Effective December 14, 1956

Den.	Fil.	Twist		Beams	Cones	Cakes	Non Shrunk Tubes
#49 and #14 Production							
75/30/3	Bright			....	$1.11	$1.03	....
100/40/2Z	"			$.96	....	....	....
100/40/3	"			.98	.96	.91	....
100/40/5	"			....	1.02	.97	....
100/60/3	"			....	.97	.92	....
125/40/2Z	"			.94	.92	....	....
150/40/3	"			.89	.85	.80	....
150/40/2Z	"			.87	....	....	....
150/40/5	"			....	.91	.86	....
150/40/8	"			....	.97	.92	....
150/40/0	"	NS		....	.71	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"	NS		....	.63	....	....
#20 Production							
150/40/3	Bright			.87	.83	.78	....
150/40/0	"	NS		....	.71	....	....
150/40/2Z	"			.87	....	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"	NS		....	.63	....	....
#20 Production							
100/40/3	Dull			....	.96	.91	....
100/68/2Z	"			1.00	....	....	....
100/60/0	"			....	.93	....	....
100/60/5	"			1.04	1.02	.97	....
150/40/3	"			.87	.83	.78	$.77
150/40/0	"	NS		....	.71	....	....
150/90/3	"			....	.90	.85	....
250/60/0	"	NS		....	.67	....	....
250/60/3	"			....	.75	....	.70
#52 Thick & Thin Rayon							
150/60/3	Bright			....	1.15	....	....
450/120/3	"			....	.89	....	....

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with orders December 7, 1956

Bright and Dull

Den.	Fil.	Turns/ Inch Up to		(A) Cones, Beams, Tubes	Skeins	Cakes
40	20	3	Textile "Cordura"*	$1.90	$1.90	$1.85
50	20	3		1.63	1.63	
50	20	3	Textile "Cordura"	1.65	1.65	1.60
50	35	3	Textile "Cordura"	1.70	1.70	1.65
75	10	3		1.17	1.20	1.08
75	15	3		1.17	1.20	1.08
75	30	3		1.17	1.20	1.08
100	15	3		1.04	1.07	.96
100	40	3		1.04	1.07	.96
100	60	3	Bright	1.04	1.07	.96
100	60	3	Dull	1.06	1.09	.98
125	50	3		.96	.98	.90
150	40	3		.91	.92	.86
150	60	3		.91		
150	60	3	Textile "Cordura"	.92	.93	.87
150	90	3	Dull	.92	.93	.87
150	100	3	Dull	.92	.93	.87
200	35	3		.82	.84	.78
200	20	3		.82		
300	50	3.5		.73	.76	.71
300	120	3	Textile "Cordura"	.74	.77	.72
450	72	3		.70	.72	.68
600	96	3		.69	.71	.67
600	240	3	Textile "Cordura"	.70	.72	.68
900	50	3		.68	.70	.66
900	144	3		.68	.70	.66
1165	480	3	Textile "Cordura"	.68	.68	.65
1800	100	3		.68		
2700	150	3		.68	.70	
5400	300	3		.75		

Thick and Thin

100	40	3	#7	1.38	1.38
150	90	3	#7	1.15	1.16	1.15
150	90	3	#19	1.15	1.16	1.15
200	80	3	#7	1.05	1.06	1.05
200	90	3	#19	1.05	1.06	1.05
450	100	3	#7	.89	.90	.89
1100	240	3	#50	1.32		1.32
2200	480	3	#50	1.14		1.14

Fiber E

300	50	2.5	.88
900	50	2.5	.83
900	90	2.5	.83
2700	150	2.5	.88
2700	270	2.5	.88
5400	540	2.5	.88

(A) 2¢/lb. additional for cones less than 3# and tubes less than 2#.
Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.
* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective December 21, 1956

Denier	Filament	Turns per In.	Type	2.8 Lb Cones	4.4 Lb Cones	Beams	2.2 Lb Tubes	4.4 Lb Tubes
100	40	2.5 "S"	Bright	1.04		1.04		
150	40	2.5 "S"	Bright	.91		.91		
150	40	2.5 "S"	Luster #4	.91		.91		
150	40	2.5 "S"	Bright intermediate strength	.92				
200	20	2.5 "S"	Bright	.82				
200	40	2.5 "S"	Bright	.82				
300	44	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Luster #4	.73		.73		
300	80	2.5 "S"	Bright extra strong	.75		.75		
450	60	2.0 "S"	Bright		.70	.70		
600	90	1.5 "S"	Bright		.69	.69	.69	.69
900	50	2.0 "S"	Bright		.68	.68	.68	.68
900	150	1.5 "S"	Bright		.68	.68	.68	.68

Luster #4 is semi-dull.
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River. PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corp.

Current Prices

First Quality Yarns	Den/Fil	Twist	Cones Knitting* Cones	Cones No Twist Knitting Cones	Cones Beams,* and Tubes** and Weaving Cones	Cones Untreated Cakes
	75/30	3.5			$1.17	$1.08
	75/30	7			1.30	
	75/30	15			1.37	
Normal	75/30	20			1.40	
Strength Yarns	100/40/60 Brt.	3.5			1.04	.96
NARCO	100/40/60	12			1.22	
	125/52/60	3			.96	.90
	125/52	10			1.13	
	150/42/60/75	3	$.90		.91	.86
	150/42	0		$.71		
	300/75	3	.73		.73	
	300/75	0		.63		
	300/75	6			.83	
	600/98	3	.69		.69	
	900/46	2.5	.68		.68	
	1800/92	2.5	.68		.68	
Semi-High	300/75 Brt.	6			$.84	
Strength Yarns	300/75	3			.74	
Hi-NARCO						

* Oiled Cones $.01 Per Pound extra for Graded Yarns only.
** 1 lb. tubes $.02 Per Pound extra for Graded Yarns only.
Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.
Prices subject to change without notice.

RAYON HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective November 1, 1956

Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.59
1230/480	High	.59
1650/720	Low	.55
1820/720	High	.55
2200/980	High & Low	.55

Suprenka (Extra High Tenacity)

1650/720	Low	.58
1900/720	High	.58
2200/980	Low	.57

* Beams Only.
Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland Tennessee; minimum freight allowed to first destination east of the Mississippi River.

Hosiery Manufacture (Continued from Page 76)

cross-dye effects in dip-dyed goods. Much can be done in construction and styling the newer yarns in men's and children's goods, with some few applications to ladies' hose.

The new automatic machines described in this report are not going to put out so much more hosiery on the counter for the promoter to sell at so much less per unit. They will however, enable mills to produce more available firsts per production unit, which is of prime importance. While it is no doubt possible to effect labor savings thereby, the machine investment and other factors must be reckoned with. Replacement by the industry of older types of machines as they become depreciated or obsolete forms the basis for installing these ultra modern producers, and not the ability of making the product a nickel or so cheaper per dozen. In time, replacement will mean fewer machines in better and well-organized mills with resulting stability not found in an industry where there are now too many marginal producers. The phenomenal success of Hanes' merchandising their 400's is a good example here.

Let me remind the pessimists of our industry who bemoan the sad state of conditions, that our population has increased about 15 millions in the past five years. Having all the modern machines and techniques at our command and about 25 kinds of yarns to choose from, with the richest country in the world to supply (without any thought of the foreign markets) I still believe that the hosiery industry is a good one to be in for those with imagination to plan and the courage to carry out their convictions. ■

News (Continued from Page 83)

Howard R. Walker has joined Dow Chemical Co.'s recently formed textile fibers department. He will head dyeing and finishing activities.

In the same department **Ferrell G. Kent** has been promoted to supervisor of quality measurement, **Robert C. Cottrell** and **Phillip A. Gruber** have become development supervisors, and will be assisted by **Charles M. Alberto** and **Harry N. Woessner.**

W. L. Prince, Jr.

Wesley L. Prince, Jr. has been appointed administrative assistant for sales for Hartford Rayon Co.

D. Crawford Smith, Jr. has joined the rayon sales department of American Enka Corp. in a sales capacity. **James T. Haigler** has joined Enka's south central district sales staff.

Herbert A. Lisle has been elected treasurer of Iselin-Jefferson Co., Inc., succeeding **J. W. Hansen** who has retired.

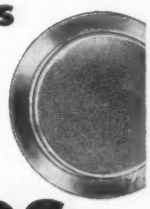
Philip H. McLaughlin has been appointed manager of sales administration at the New York office of the Stauffer Chemical Co.

Eddie Loeb has been appointed New York representative for Austin Knitting Mills.

(Continued on Page 87)

superior

manufacturing techniques assure superior precious metal

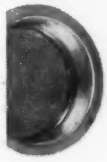


spinnerettes

The grain characteristics, hardness, corrosion resistance, hole and surface finish of Baker Precious Metal Spinnerettes reflect the superior care taken in their manufacture, plus Baker's vast experience in alloying precious metals.

Among the full range of alloys available is the Rhodium-Platinum (90% Pt. and 10% Rh.) which has gained universal recognition and acceptance. Its fine performance in encrustation reduction and maintenance of hole and surface finish results in the production of higher quality yarns.

Baker's masterful production techniques and integrated operation result in stringent supervision at each manufacturing phase—melting, alloying, rolling, cup-forming. The product is a spinnerette which offers maximum performance and protection against mechanically inflicted damage and chemical corrosion.



In addition to Precious Metal Spinnerettes, Baker can supply Stainless Steel Spinnerettes with similar high quality workmanship that offer rigidly controlled hardness and grain characteristics. They provide mirror-like finish throughout the hole, an extremely sharp hole edge and a surface finish that offers maximum protection against corrosion.

Write for our catalog "Spinnerettes For Synthetic Fibers".

BAKER BAKER & CO., INC. PRECIOUS METALS

113 Astor Street
Newark 5, New Jersey

NEW YORK • SAN FRANCISCO
LOS ANGELES • CHICAGO

ENGELHARD INDUSTRIES

American Viscose Corp.

Effective November 1, 1956
Revised November 14, 1956

Super Rayflex

Denier	Filament	Twist	Beams	Cones
1100	490	0	$.63	$.63
1100	490	4.1Z	.63	....
1650	980	0	.58	.58
1650	980	4.1Z	.58	....
2200	980	0	.57	.57

Tire Yarn

1100	490	2.5Z	.59	....
1650	980	0	.55	.55
1650	980	3.2Z-3.6Z	.55	....
2200	980	0	.55	.55

High Strength

1150	490	2.5Z	.59	.59
1230	490	3.6Z	.59	.59
1650	980	3.5Z	.55	.55
1875	980	3.6Z	.55	.55

Super Rayflex, Tire Yarn and High Strength yarns are sold "Not Guaranteed for Dyeing."

Tire Fabric

	Tire Yarn	Super Rayflex
1100/490/2	$.69	$.73
2200/980/2	.635	.655

Above prices based on 80% minimum Carcass, 15% maximum Top Ply, 5% maximum Breaker.

1650/980/2

* Production Factor

525	Open	Carcass	$.635	$.665
300	490	Top Ply	.645	.675
115	275**	Breaker	.67	.70

* Determined by dividing total ends by picks.

** Orders limited to 5% of total 1650 Fabric booked for any given period.

The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition—freight collect
Terms: Net 30 days.

Celanese Corporation of America

Effective December 27, 1955
Supersedes September 12, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb.
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "
60/2.5/80 Olive Green—Spun Dyed—OG106		4 lb. Cones	3.50 lb.

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U. S. A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	$2.30			
300/280	0.8Z	$2.05			
400/400	0.8Z	$1.75			$1.70
400/400	0			$1.75	
800/800	0.8Z	$1.25	$1.25		$1.20
800/800	0			$1.25	
1600/1600	0.8Z	$1.15	$1.15		$1.10
1600/1600	0			$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U. S. A. East of the Mississippi River. Shipments West of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with shipments December 7, 1956

"Super Cordura"*
(all packages)

1100	480	2	$.63
1250	480	2	.63
1650	720	2	.58
1900	720	2	.58
2200	960	2	.57
2450	960	2	.57

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective November 1, 1956

Unbleached Bright High Tenacity Yarns

SINGLE END BEAMS AND CONES:

Den.	Fil.	Turns Per In.	4.4 Lb. Cones	Beams	2.2 Lb. Tubes	4.4 Lb. Tubes
1100	480	1.5 "Z"	.59	.59	.59	.59
1650	720	1.5 "Z"	.55		.55	.55
2200	1000	1.5 "Z"	.54	.54	.54	.54
3300	1440	1.5 "Z"	.54	.54	.54	.54
4400	2000	1.5 "Z"	.54	.54	.54	.54

"Above Prices apply to Type 100. Type 200 Tyron Prices are 3¢ more."

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

Prices are subject to change without notice.

North American Rayon Corp.

High-Strength Yarns—SUPER-NARCO		Twist	Cones	Beams
1650	720	3Z		$.55
1850	720	3Z	$.55	
Super High Strength Yarns—				
1650	720	1.5Z	.58	.58

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b delivery point.

ACETATE FILAMENT YARN

American Viscose Corp.

Current Prices
Effective December 21, 1956

Bright and Dull
* Intermediate Twist

Denier & Filaments	Cones & 4-6 Lb. Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	$1.04	$1.02	$1.05	$.98	$.99
75/20	1.00	.98	1.01	.94	.95
100/28	.95	.93	.96	.89	.90
120/32	.86	.84	.87	.80	.81
150/41	.77	.76	.78	.72	.73
200/54	.73	.72	.74	.69	.70
300/80	.69	.68	.70	.65	.66

* Standard Twist 2¢ additional.
Terms: net 30 days.

Celanese Corp. of America

Current Prices
Effective December 20, 1956

Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6-Lb Cones	Beams	4 & 6-TM Tubes	4-Pound Cheeses	Spinning Twist Cones	Beams	O Twist Tubes
45/13	$1.17	$1.18	$	$	$	$1.12	$ ....
55/15	1.04	1.05	....	....	.98	.99	.925
75/20	1.00	1.01	.98	....	.94	.95	.84
75/50	1.02	1.03	1.00	....			.89
100/26-40	.95	.96	.93	....	.89	.90	.81
120/40	.86	.87	.85	....	.80	.81	
150/40	.77	.78	.77	.77	.72	.73	.69
200/52	.73	.74	.73	....	.69	.70	
300/80	.69	.70	.69	....	.65	.66	.63
450/120	.67	.68	.67	....	.63	.64	....
600/160	.65	.66	.65	....	....	....	....
900/80-240	.63	.64	.63	....	....	....	.61

150 Denier 12-TM Tubes	.76
55/0/15 Dull Tricot Beams	.985
2-Pound Cheeses	.01 Less Than 4-Pound Cheeses
2-BU and 4-Bu Tubes	Same Price as 4 and 6-Lb. Cones
2-Lb. Twist Tubes	.01 Less Than 4 & 6-Lb. Twist Tubes on 120, 200 and 300 Denier Intermediate Twist

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/80	.94		....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Effective March 11, 1955

AATT Appalachian Group (Continued from Page 73)

Other officers elected include W. G. Faw, Tennessee Eastman Co., first vice chairman; Dr. Arthur Cresswell, North American Rayon, second vice chairman; Dr. Carl Wooten, Tennessee Eastman, treasurer; and Harold A. Thompson, Tennessee Eastman, secretary.

Clifford Karnes, head of quality control for Burlington Industries, spoke on "The All-Functional Fiber Required For the Textile Industry," dealing with strength of fiber (wet and dry), swelling characteristics, necessary elongation and toughness, geometric properties, and moisture regained.

Next meeting of the group has been set for May 9 at Elizabethton. A meeting the second Thursday in October and another the first Thursday in December will round out the year's slate of meetings.

Power-Driven Shuttle Patents Licenses

Licenses under basic patents on power-driven shuttle mechanisms for looms can now be obtained from American Viscose Corp., according to Dr. Worth Wade, manager of the firm's patent development department.

The shuttle of a loom, as described in Patent No. 2,784,743, is driven by means of a fluid propellant, such as liquid or gas. An earlier patent, No. 2,682,-895, has the shuttle driven by solid explosive charges. A third invention, now pending, relates to time-delay mechanism for the power-driven shuttles. Use of a power-driven shuttle is expected to eliminate about 35 moving parts on present looms, reduce the vibration and greatly increase the speed of the loom.

News (Continued from Page 85)

Rudolf Good has joined Jacobson Fabrics, Inc. to take charge of all yarn-dyed Jacquard operations.

Jackson A. Moore has rejoined Foster Machine Co., after an absence during which he was associated with Allied Chemical & Dye Corp. He is now a project engineer at Foster's plant in Westfield, Mass.

Louanne Barberie has been appointed a fashion coordinator for Dan River Mills.

Philip Bergh

Philip Bergh has been appointed advertising and sales promotion manager of the textile division of United States Rubber Co.

M. J. Martin has been elected executive vice president of Penick & Ford, Ltd., Inc. In the same company **O. H. Tousey** has been elected a vice president and is succeeded in his former position as western bulk sales manager by **L. S. Poer. W. S. Russell** has become eastern bulk sales manager. **D. P. O'Connor** has been appointed vice president in charge of public relations, and **H. A. Horan**, sales administrative consultant at Cedar Rapids.

Hoke S. Robinson, of Robinson Textile Co., has been appointed to represent Continental Can Co.'s line of Conomet metallic yarns in Ga., Miss., Ala., and Tenn.

(Continued on Page 89)

NON-FLUID OIL

TRADE MARK REGISTERED

THE CARDING LUBRICANT THAT ASSURES EVEN SLIVER

Uneven card sliver is ordinarily due to the doffer and top flats getting out of adjustment as a result of bearing wear. Common dripping, leaking oils do not prevent this wear, because they don't stay in the bearings long enough.

Drip-less and waste-less NON-FLUID OIL adheres to bearing surfaces, lubricating dependably until entirely consumed. It keeps off card clothing and outlasts oil—saving you money on lubricant and application cost.

We are prepared to furnish mills with skilled lubrication engineering service. NON-FLUID OIL has been used successfully for years by most leading mills. Send for informative bulletin T-5 and free testing sample of NON-FLUID OIL.

NEW YORK & NEW JERSEY LUBRICANT COMPANY

292 MADISON AVE., NEW YORK 17, N. Y.

WORKS: NEWARK, N. J.

So. Dist. Mgr. : Lewis W. Thomason, Jr. Charlotte, N. C.

WAREHOUSES

Birmingham, Ala. Greensboro, N. C.
Atlanta, Ga. Greenville, S. C. Detroit, Mich.
Columbus, Ga. Chicago, Ill. Providence, R. I.
Charlotte, N. C. Springfield, Mass St. Louis, Mo.

1896 61 1957 YEARS OF LUBRICATION SERVICE TO INDUSTRY NON-FLUID OIL

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

Celaperm Black Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Intermediate Twist Cones	Intermediate Twist Bms.
45-13	$1.03	$1.11	$1.11	$1.12			$1.17	$1.18
45-24	1.03	1.11		1.12			1.17	1.18
55-18	.925	.985		.99			1.04	1.05
55-24	.925	.985		.99			1.04	1.05
75-8	.94							
75-24	.84	.94	.94	.95		.98	1.00	1.01
75-50	.89			.97		1.00	1.02	1.03
100-11	.90		1.04				1.04	
100-24	.81		.89	.90		.93	.95	.96
100-32	.81		.89	.90		.93	.95	.96
100-66	.83					.95	.97	.98
120-40	.77	.80	.80	.81		.85	.86	.87
120-50	.77	.80	.80	.81		.85	.86	.87
150-16	.72				$.81	.81	.81	.82
150-40	.69	.72	.72	.73	.77	.77	.77	.78
200-60	.68		.69	.70	.73	.73	.73	.74
240-80			.67				.71	
300-40	.63						.69	.70
300-80	.63	.65	.65	.66	.69	.69	.69	.70
450-120	.63		.63	.64	.67	.67	.67	.68
600-80							.65	
600-160			.62	.63	.65	.65	.65	.66
900-44	.61		.62	.63	.63	.63	.63	.64
900-70	.61		.62	.63	.63	.63	.63	.64
900-240			.62	.63	.63	.63	.63	.64
1800-88			.60	.61	.61	.61	.61	.62
1800-140			.60	.61	.61	.61	.61	.62
2700-132			.60	.61	.61	.61	.61	.62
2700-210			.60	.61	.61	.61	.61	.62
3000-210					.61	.61	.61	.62

(A) Regular Twist (2.9 thru 5 T.P.I.)—add $.02 to Intermediate Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

(C) 2 lb. Twisted Tubes are the same as 4 & 6 lb. tubes except on 150, 200 and 300 denier Intermediate Twist where the price is $.01 less.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist Twisted Tubes 2 Lb.	Intermediate Twist Twisted Tubes 4 & 6 Lb.	Intermediate Twist Cones	Intermediate Twist Beams
55-18	$1.245	$1.315		$1.32	$1.35	$1.35	$1.37	$1.38
75-24	1.18	1.28	$1.28	1.29	1.32	1.32	1.34	1.35
100-32	1.14		1.22	1.23	1.26	1.26	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.10	1.11	1.11	1.12
200-60	1.00		1.01	1.02	1.04	1.05	1.05	1.06
300-80	.95	.97	.97	.98	1.00	1.01	1.01	1.02

(A) Regular Twist—Add $.02 to Intermediate Twist Price.

Black

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Intermediate Twist Cones	Intermediate Twist Beams
55-18	$1.045	$1.115		$1.12		$1.15	$1.17	$1.18
75-24	.98	1.08	$1.08	1.09		1.12	1.14	1.15
100-32	.94		1.02	1.03		1.06	1.08	1.09
150-40	.83	.86	.86	.87		.91	.91	.92
200-60	.80		.81	.82		.85	.85	.86
300-40	.75	.77	.77	.78	$.81	.81	.81	.82
300-80	.75	.77	.77	.78	.81	.81	.81	.82
450-120			.75	.76	.79	.79	.79	.80
600-160			.73	.74	.77	.77	.77	.78
900-44	.72		.73	.74	.74	.74	.74	.75
900-70	.72		.73	.74	.74	.74	.74	.75
900-240			.73	.74	.74	.74	.74	.75

(A) Regular Twist (2.9 thru 5 T.P.I.)—add $.02 to Int. Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

(C) 2 lb. Twisted Tubes are the same as 4 & 6 lb. Twisted Tubes except on 150, 200 and 300 denier Intermediate Twists where the price is $.01 less.

Specialty Yarns

Type 20	Same Price as Regular Yarn	
Type C	Same Price as Regular Yarn	
Type C—Thick & Thin		
100-22	Int. Twist 4 lb. Cones	$1.39

Denier & Filament	Natural Cones	Natural Beams	Black Cones	Black Beams	Color-Sealed Cones	Color-Sealed Beams
100-22 Int. Twist	$1.36					
200-64 Int. Twist	1.05		$1.15		$1.35	
200-64 Reg. Twist	1.08	$1.09	1.17	$1.21		
300-80 Int. Twist	1.00					

Terms: Net 30 days. Subject to change without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 21, 1956

"Estron"* Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Tubes	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Tricot Beams Zero Twist
55/13	$1.06	$1.04	$1.02	$1.05	$.98	$.99	$.92½	$.99	$.98½
75/19	1.02	1.00	.98	1.01	.94	.95	.84	.95	....
75/49	1.04	1.02		1.03	....	....	....	....	....
100/25	.97	.95	.93	.96	.89	.90	.81	....	....
120/30	.88	.86	.84	.87	.80	.81	....	....	....
150/38	.79	.77	....	.78	.72	.73	.69	....	....
200/50	.75	.73	....	.74	.69	.70	....	....	....
300/75	.71	.69	....	.70	.65	.66	.63	....	....
450/114	.69	.67	....	.68	.63	.64	....	....	....
600/156	.67	.65	....	.66	.62	.63	.63	....	....
900/230	.65	.63	....	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	.56

Current Prices—December 19, 1955

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist & Spun Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax

* "Estron" and "Chromspun" are trade-marks of the Eastman Kodak Co.

RAYON STAPLE and TOW

American Viscose Corp.

Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .29
Extra Strength	
1.0 Denier	.34
"Viscose 32A"	.36
"Avisco Crimped"	
1.25 Denier	.34
3.0 & 5.5 Deniers	.31
8.0 & 15.0 Deniers	.33
"Avisco Smooth"	
8.0, 15.0 & 22.0 Deniers	.35
Short Staple Blend	.34

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)	
1.5, 3.0 & 5.5 Denier Per Filament	.32
9.0 Denier Per Filament	.34
Grouped Continuous Filaments (4400/300 & 2000/1500)	.65

Prices of other descriptions on request.

Terms: Net 30 days.

Celanese Corp. of America

Current Prices

Rayon Tow

	Bright & Dull
1.5, 3, 5 D.P.F.	.32
8 D.P.F.	.34

Courtaulds (Alabama) Inc.

Effective March 1, 1957

Rayon Staple

	Bright	Dull
1½ and 3 denier	$.29	$.29

Available in 1½", 1-9/16" and 2".

Europe

(Continued from Page 48)

Terylene Production in Japan—Imperial Chemical Industries Ltd. has licensed Teikoko Rayon Co. and Toyo Rayon Co. for producing Terylene in Japan. The terms: "substantial" fixed payment and royalties on sales. Output of five tons daily is due this year, 15 tons by the end of 1958. This would be less than a quarter of Japan's expected needs. American Viscose and Harben's Ltd. signed an agreement to exchange patents and technical data.

British Rayons Improve—Paced by rising demand for staple fiber, British output of rayons during first months of year continued upsurge registered during final period of 1956. Ouput is totaling over 43 million lbs. a month. High tenacity rayon staple is fast developing and widening markets. Tufted carpets and high-quality shirts, blended with cotton, are taking larger quantities of high tenacity rayon yarn. Courtaulds, Ltd. has developed a new process for crimping continuous filament yarn, called "Courtolon." It is designed for nylon. However, the firm has hopes for it elsewhere, and it could prove a boon to rayons where most needed.

News

(Continued from Page 87)

V. C. McQuiddy, Jr. has been appointed to the newly created post of sales manager of textile products at U. S. Rubber Co. and has been succeeded as yarn sales manager by **John H. Shaw.** Mr. Shaw will be assisted by **Joseph B. Jackson** and **Samuel K. George, III. Judson J. Milam, Jr.** has been appointed manager of Trilok, U. S. Rubber's new upholstery fabric. **James G. Ford** and **Ben E. Ferguson** will assist him.

Ben and **Alice Fortuna** have been appointed stylists for Sidney Blumenthal & Co., Inc. **Larry Manning** has joined the company's fashion fabrics division.

Edmund W. Mulvehill has joined the Greige Goods Division of Amerotron Corp.

Henry B. Jammer has been named manager of production planning for Celanese Corp. of America and **James L. Patterson** manager of the company's sales order department. **Arthur F. Happe** has been appointed special assistant to the Controller of Celanese.

Philip E. MacLean has been appointed sales manager of the textile division of Onyx Oil & Chemical Co.

J. R. Nelligan has resigned from his post of vice president and general manager of the Stead & Miller Division of Collins & Aikman.

George A. Darsie has been appointed eastern district sales manager for Silicone Products Department, General Electric Co.

Dorrance H. Goodwin has been appointed executive director of Lowell Technological Institute Research Foundation.

Victor H. Eyman has been appointed sales manager for printer-converter trades for the industrial trades tape division of Minnesota Mining & Manufacturing Co.

*13¾" and 21" diameter heads

MILTON BEAMS*
(for Nylon and rubber yarns)
GIVE YOU THE BIG BONUS OF

SUPER STRENGTH

The super strength of Milton's forged head Tricot and Raschel Beams is no idle claim—it's been proven by yarn producers, big mills and small mills alike!

They're light in weight, yet rugged in design to give true dimensional stability without objectionable deflection or distortion. Milton's forged, heat-treated aluminum alloy heads and extra heavy barrels become a one-piece beam by the continuous weld process first introduced in the field by Milton. Trapped ends of yarn or misalignment of keyways are eliminated because there are no mechanical joints!

You name the yarn . . . monofilament, fine denier, low turn or high twist—synthetics or rubber, Milton gives you true-running, well balanced beams to handle unprecedented yardages and extreme pressures!

WRITE FOR FREE BULLETINS . . . No. 49-A on Light Metal Beams and No. 54-S on Steel Beams. The Milton line includes warp beams for broad, narrow fabric, velvet and carpet looms, as well as light metal raschel, tricot and section beams.

Over a Quarter Century of Dependability in Yarn Beams

MILTON MACHINE WORKS, INC.
DESIGNERS • ENGINEERS • MANUFACTURERS
MILTON • PENNA.

"Coloray" Spun Dyed Rayon Staple

	1½ Den. 1-9/16"	3 Den. 2"	4½ Den. 6"	Price per Lb.
	(Code numbers for color and denier)			
Black	1404	1419	1425	37¢
Tan	8004	8019	8025	39¢
Medium Brown	8804	8819	8825	39¢
Silver Grey	1004	1019	1025	39¢
Terra Cotta	8204	8219	8225	39¢
Khaki	3004	3019	3025	40¢
Dark Brown	8604	8519	8525	40¢
Slate Grey	0804	0819	0825	43¢
Light Blue	4004	4019	4025	44¢
Sulphur	2004	2019	2025	44¢
Apple Green	5104	5119	5025	45¢
Peacock Blue	4604	4619	4625	46¢
Medium Blue	4204	4219	4225	48¢
Dark Blue	4404	4419	4425	49¢
Hunter Green	5404	5419	5425	49¢
Indian Yellow	2504	2519	2525	49¢
Pink	6004	6019	6025	50¢
Turquoise	4804	4819	4825	50¢
Malachite Green	5204	5219	5225	51¢
Red	7004	7019	7025	56¢

(In addition to the above, Black is also available in:
1½ den. 1⅛" (1401) 3 den. 1-9/16" (1416) 4½ den. 2"
3 den. 1⅛" (1413) 3 den. 2½" (1420) 4½ den. 4")

Terms: Net 30 days, f.o.b. LeMoyne, Alabama. Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

Rayon Staple

Effective February 8, 1956

REGULAR

1.5 denier Bright
1½" and 2" ..... Withdrawn

VISCALON 44

15 denier 3" Dull ..... Withdrawn

VISCALON 66 (Crimped)

8 denier 2" Bright ..... 33¢
15 denier 3" Bright ..... 33¢
15 denier 3" Dull ..... 33¢

"KOLORBON"—Solution Dyed Rayon Staple

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	45¢	45¢	....
Sandalwood	45¢	45¢	....
Nutria	45¢	45¢	....
Sea Green	45¢	45¢	....
Mint Green	45¢	45¢	....
Champagne	45¢	45¢	....
Cafe Brown	....	....	55¢
Midnight Black	....	....	45¢
Gold	48¢	48¢	....
Turquoise	45¢	45¢	....
Melon	48¢	48¢	....
Light Blue	45¢	45¢	....
Charcoal Grey	45¢	45¢	....

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

ACETATE STAPLE and TOW

Celanese Corp. of America

Current Prices

Staple

Celanese Acetate Staple	Bright & Dull
2, 3, 5.5 & 8 Individual Deniers	$.32
12 & 17 Individual Deniers	.33
35 & 50 Individual Deniers	.36
⅜" to ⅞" cut length (all deniers)—Premium	.03
Variable Acetate Fibers	.30
35 Individual Denier Flat Filament Acetate	.38

Tow

Celanese Celatow Acetate	Bright & Dull
2, 3, 5.5 & 8 Individual Deniers	$.34
12 & 17 Individual Deniers	.35
35 & 50 Individual Deniers	.37

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.

NON CELLULOSIC YARN

NYLON

Allied Chemical and Dye Corporation

Caprolan®†

Effective April 15, 1957

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb	2nd Grade Price/Lb
200	32	¾	Z	B	Bobbin	$1.49	$1.44
210	32	1	Z	HB	Bobbin	1.49	1.44
560	32	1	Z	HB	Aluminum Tube	1.39	1.29
840	136	½	Z	HBT	Aluminum Tube	1.30	1.20

Heavy Yarn

						Price/Lb.
2100	408	0	O	HB	Paper Tube*	$1.27
2100	112	0	O	HB	Paper Tube*	1.30
2500	408	0	O	HB	Paper Tube*	1.27
3360	544	0	O	HB	Paper Tube*	1.26
4200	680	0	O	HB	Paper Tube*	1.26
4200	224	0	O	HB	Paper Tube*	1.29
5000	816	0	O	HB	Paper Tube*	1.25
5000	280	0	O	HB	Paper Tube*	1.28
5800	952	0	O	HB	Paper Tube*	1.25
7500	1224	0	O	HB	Paper Tube*	1.24
10000	1632	0	O	HB	Paper Tube*	1.24
15000	2448	0	O	HB	Paper Tube*	1.23

Terms—Net 30 days.
Prices subject to change without notice.
All prices quoted F.O.B. Shipping Point.
Bobbins are invoiced at 45¢ ea.
Aluminum Tubes are invoiced at 40¢ ea.
* Paper Tubes non-returnable, no charge.
** Type is used to describe luster and tenacity

B—Bright.
H—High Tenacity.
T—Heat Stabilized.

Lowest freight cost prepaid or allowed east of Mississippi River, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

† Allied Chemical's polyamide fiber.

American Enka Corporation

Nylenka Filament Yarn Prices

Effective December 21, 1956

Denier & Filament	Twist	Luster	Tenacity	Package	Yarn Weight per Package	Price per Pound, Std.	Price per Pound, Sub.
15/1	0.5Z	semi-dull	Normal	Pirn	1 lb.	$5.25	$5.00
30/6	0.5Z	semi-dull	Normal	Pirn	2 lb.	2.36	2.21
40/8	0.5Z	semi-dull	Normal	Pirn	2 lb.	2.01	1.81
50/13	0.5Z	semi-dull	Normal	Pirn	2 lb.	1.91	1.76
100/24	0.5Z	semi-dull	Normal	Pirn	2 lb.	1.65	1.60
100/32	0.5Z	semi-dull	Normal	Pirn	2 lb.	1.65	1.60
200/34	0.5Z	bright	Normal	Pirn	2 lb.	1.49	1.44
200/34	0.5Z	bright	Normal	Cone	4 lb.	1.49	1.44
210/34	0.5Z	bright	High	Pirn	2 lb.	1.49	1.44
210/34	0.5Z	bright	High	Cone	4 lb.	1.49	1.44
840/140	0.5Z	bright	High	Pirn	2 lb.	1.30	1.20
840/140	0.5Z	bright	High	Cone	4 lb.	1.30	1.20
840/140	0.5Z	bright	High	Beam	—	1.30	1.20

Pirns charged at $.25 each. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices

Effective December 19, 1956

Denier	Filament	Twist	Type*	Package	Standard	Second
10	1	O	SD	Bobbins	$8.42	$7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	....
30	10	Z	SD	Bobbins	2.36	2.21
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.75
40	13	Z	SD	Bobbins	2.01	1.81
40	13	Z	SD	Spools	2.11	....
40	13	Z	D	Bobbins	2.06	1.81
40	13	Z	D	Spools	2.16	....
40	13	Z	RD	Bobbins	2.06	1.81
40	13	Z	RD	Spools	2.16	....
50	17	Z	SD	Bobbins	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.66
70	34	Z	B	Bobbins	1.71	1.66
70	34	Z	D	Spools	1.86	....
80	26	Z	SD	Bobbins	1.71	1.56
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
200	34	Z	B	Bobbins	1.49	1.44
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Spools	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Bobbins	1.39	1.29
840	136	Z	HB	Tubes	1.34	1.24
840	140	Z	HB	Beams	1.30	1.20
840	140	Z	HB	Tubes	1.30	1.20

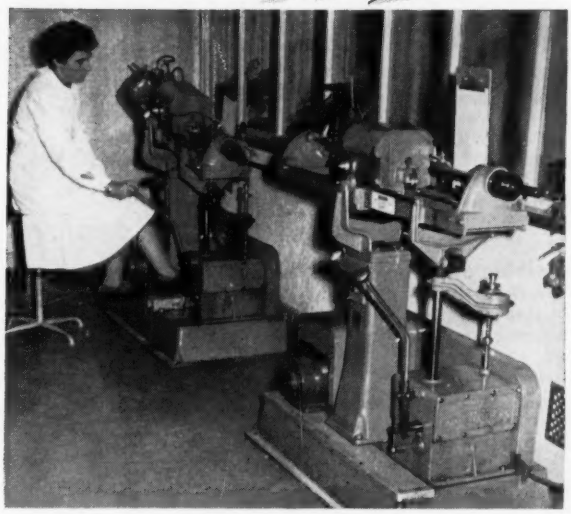
**Types*: D—Dull; SD Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $77.00 and $95.00 depending on type; and beams and crates for beams are invoiced at $220 and $25 respectively.

Prices subject to change without notice.

– and in

Switzerland



SCOTT TESTERS* AT

Societe de la Viscose Suisse

At Emmenbrucke, Switzerland, these Incline-plane Scott Testers* are used in the laboratory of the Societe de la Viscose Suisse for the evaluation of tyre cords. These IP-4 serigraphs perform tensile and hysteresis tests from 0 to 50 lbs., or 0 to 20 kilograms. Their "picturized" result charts are readily understood regardless of language, and they test in conformance with international standards, and give a universal testing language understood and accepted everywhere. The world status of Scott equipment is attested by the fact that today

nearly 40% are shipped export.

Outline your testing problem and let us assist with literature and counsel.

*Trademark

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(Also Southeastern Service & Repairs)
SCOTT TESTERS (Southern), INC.
P. O. Box 834
Spartanburg, S. C.

Sales Rep. for Ga., N. C.; S. C.
JOHN KLINCK
304 West Forest Avenue
North Augusta, S. C.

REPRESENTATIVES IN FOREIGN COUNTRIES

Standard of SCOTT the World

bridges

A bridge is a roadway over an obstacle. The obstacle may be a ravine, a river, even another road. But it is basically a means of completing the job without trouble.

Ordinarily, all we see of the bridge is the roadway itself. If it's smooth and wide, we like it; if it's rough or narrow, we don't. But we never give a thought to the real strength of a bridge: the supporting columns.

Without the structure to support it, the smooth, broad roadway would be in the river—we'd have no bridge at all!

So it is with dyes. The color itself is fine, but only a means of completing the job. What good would the dye be if there were no thought given to developing the dye for the specific purpose; if there were no one to guide the hand of the user? Dyes alone are good, but they're much better when backed up by the proper support.

So to bridge the gap between greige goods and finished cloth, call on Sandoz. We supply quality products supported by objective basic research and expert application counsel.

SANDOZ, INC., 61-63 Van Dam Street, New York 13, N. Y. ALgonquin 5-1700.

SANDOZ

SANDOZ

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	$9.47	$8.82
10-1	0	200	Bobbin	8.42	7.82
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Tricot Bms.	5.36	...
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Tricot Bms.	5.41	...
15-1	0	680	Bobbin	5.30	5.00
20-1	0	200	Bobbin	4.42	4.12
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	680	Bobbin	2.96	2.61
20-20	0.7Z	209	Bobbin	6.00	...
20-7	0.5Z	200	Tricot Bms.	3.02	...
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	...
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	...
30-26	0.5Z	200	Bobbin	2.49	2.21
40-7	0.5Z	200	Bobbin	2.11	1.75
40-13	0.5Z	200	Bobbin	2.01	1.81
40-13	0.5Z	200	Tricot Bms.	2.11	...
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	670/680	Bobbin	2.06	1.81
40-13	0.5Z	670/680	Tricot Bms.	2.16	...
40-34	0.5Z	200	Bobbin	2.21	1.81
50-17	0.5Z	200	Bobbin	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.56
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	200	Bobbin	1.56	1.46
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	...
260-17	1Z	100/300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
780-51	0.7Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs/Beam	1.30	1.20

Color-Sealed Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
70-34	0.5Z	140	Bobbin	$2.06	$2.01
260-34	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79

Industrial Yarn				Price/Lb.
2520-420	0	300/700	Paper Tube	$1.27
4200-700	0	300/700	Paper Tube	1.25
5040-840	0	300/700	Paper Tube	1.25
7560-1260	0	300/700	Paper Tube	1.24
10080-1680	0	300/700	Paper Tube	1.24
15120-2520	0	300/700	Paper Tube	1.23

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 100—Bright, normal tenacity.
Type 140—Bright, color-sealed, black, normal tenacity.
Type 200—Semidull, normal tenacity.
Type 209—Semidull, normal tenacity.
Type 300—Bright, high tenacity.
Type 400—Semidull, high tenacity.
Type 670—Dull, normal tenacity.
Type 680—Dull, normal tenacity.
Type 700—Bright, high tenacity.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item.
Bobbins—25 cents or 45 cents depending on type
Aluminum Tubes—40 cents each
Tire Cord Beams—$220.00 each
Cradles for Tire Cord Beams—$115.00 each
Tricot Beams—$95.00 each
Cradles for Tricot Beams—$130.00 each
(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Tubes 1st Gr.
30-20	0	Dull	57	$2.86
40-27	0	Semidull	56	2.41
40-27	0	Bright	55	2.41
40-27	0	Dull	57	2.46
70-34	0	Semidull	56	$2.01
70-14	0	Bright	55	2.01
70-34	0	Bright	55	2.01
70-34	0	Dull	57	2.06
100-34	0	Semidull	56	$1.94
140-28	0	Bright	55	1.89
150-68	0	Semidull	56	1.91
220-50	0	Bright	51	1.84
250-50	0	Bright	55	1.86
1100-250	0	Semidull	59	$1.50
1100-250	0	Bright	51	1.50

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.
Type 59—Semidull, high tenacity.

Tubes are invoiced as a separate item at $.70 each. The only exception to this is an $.80 charge on the tubes used for 30 Denier Dull. All tubes are returnable for credit.

* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

The Chemstrand Corp.

Current Prices

"Acrilan"

2.0 denier Semi-dull staple and tow	$1.18
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.12
3.0 denier Bright & Semi-dull staple and tow	1.12
5.0 denier Bright & Semi-dull staple and tow	1.12
8.0 denier Bright and Semi-dull staple and tow	1.12

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

Carbide and Carbon Chemicals Co.

Div. Union Carbide and Carbon Corp.

Textile Fibers Dept.

Effective November 1, 1955

Dynel Staple

Natural Dynel	
3, 6, 12, and 24 Denier, Staple and Tow	$1.05 per lb.
Whitened Dynel, and Dynel Spun with Light Colors: Blonde, or Gray	
3 and 6 Denier, Staple and Tow	1.20 per lb.
Dynel Spun with Dark Colors: Black, Charcoal, and Brown	
3 and 6 Denier, Staple and Tow	1.30 per lb.

Prices are quoted f.o.b. South Charleston, W. Va.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"** Acrylic Staple & Tow

Type 42	1st Grade
1.0 Denier Semidull & Bright—Staple only	$1.48
2.0 Denier Semidull	1.33
3.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull Color-sealed Black—Staple only	1.63
6.0 Denier Semidull & Bright	1.20
4.5 Denier Semidull	1.20
10.0 Denier Semidull	1.20

Tow—Total Denier 470,000
Staple Lengths—1½", 2", 2½", 3", 4½"
High Shrinkage Staple same price as Regular Staple

Type 39 $1.06

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 4.2) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Terms: Net 30 Days.

** "ORLON" is DuPont's registered trade-mark for its acrylic fiber.

Eastman Chemical Products, Inc.
Tennessee Eastman Co.

Effective November 15, 1956

"Verel"*

Deniers	Dull and Bright
2, 3, 5 and 8	$1.10 per pound

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of the Mississippi River. Seller reserves the right to select route and method of shipment. If buyer requests and seller agrees to a route or method involving higher than lowest rate buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

NYLON

American Enka Corp.

Nylenka (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1⅛, 1½, 2, 2⅜, 3, 4½	$1.28
6	bright	3, 4½	1.28
8	bright	2⅜	1.20
10	bright	3	1.20
15	bright	3	1.20

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

COLOR RICHES

top colorfastness... color beauty...
color uniformity... color versatility

UNLIMITED for fabric, apparel, home furnishings, everything

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COLORAY®

solution-dyed rayon fiber CAPTIVE COLOR ..."CAN'T ESCAPE!"

COURTAULDS (Alabama) Inc., 600 Fifth Ave., N. Y. 20

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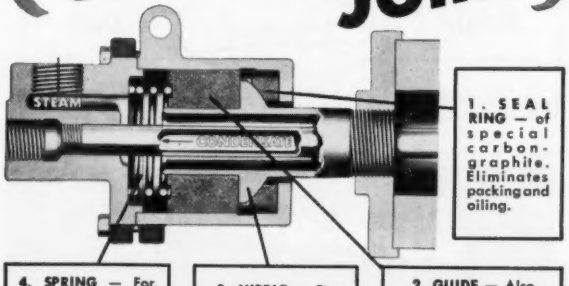
Specializing in Textiles since 1914

MODERNIZATION PROGRAMS
PLANT LAYOUTS
MANAGEMENT PROBLEMS
WORK LOAD STUDIES
COST REDUCTION REPORTS
COST SYSTEMS
SPECIAL REPORTS

RALPH E. LOPER CO.

GREENVILLE, S. C. Dial 2-3868
FALL RIVER, MASS. Dial OSborne 6-8261

Only 4 internal parts in this self-supporting Johnson Joint



1. SEAL RING — of special carbon-graphite. Eliminates packing and oiling.

2. GUIDE — Also of carbon-graphite. Makes joint self-supporting.

3. NIPPLE — Rotates with roll, seals against ring.

4. SPRING — For initial seating only. In operation joint is pressure sealed.

With this 3000 Series Type S-B2 Joint, an assembly plate can be added at any time; it is used with the Johnson Syphon Elbow, to hold internal parts in position when the head is removed. Write for Bulletin No. S-2001.

The Johnson Corporation
844 Wood St., Three Rivers, Mich.

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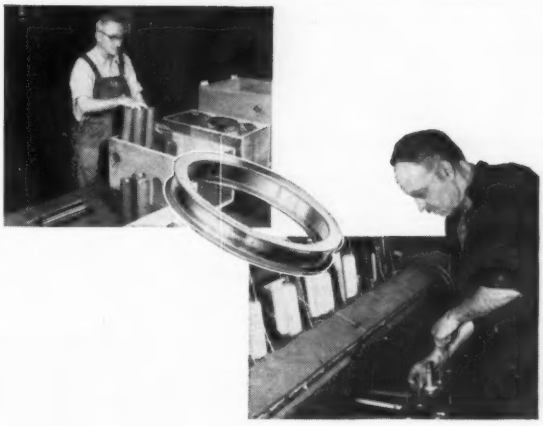

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Textile Fibers Dept.
Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	Price/Lb.
1.5	200	1½"—4½"	None made	$1.33
1.5	201	1½"—4½"	None made	1.35
3.0	100/200	1½"—4½"	430M	1.28
3.0	101/201	1½"—4½"	455M	1.30
6.0	100	1½"—4½"	330M	1.28
6.0	101	1½"—4½"	345M	1.30
15.0	100	1½"—6½"	330M	1.20
15.0	101	1½"—6½"	None made	1.22

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1½, 1¾, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not crimpset.
Type 101 Bright, normal tenacity, crimpset.
Type 200 Semidull, normal tenacity, not crimpset.
Type 201 Semidull, normal tenacity, crimpset.
These prices are subject to changes without notice.
Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

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Effective November 29, 1956

Nylon Staple

1.5 denier	$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 and 15 denier	1.20 per lb.

Bright and semi-dull, required length.

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Textile Fibers Dept.
Current Prices

"Dacron"* Staple and Tow

Denier	Luster	Type	Length	Tow Bundle	1st Gr.
1.25	Semidull	54	1¼"-3"	....	$1.56
1.5	Semidull	54	1¼"-3"	....	1.51
3.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
4.5	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
6.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41

Terms: Net 30 Days.

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POLYVINYL ACETATE

American Viscose Corp.

Effective October 1, 1956

"Vinyon"® Staple

3.0 denier	½" unopened	$.80 per lb.
3.0 "	1¼" unopened	.80 per lb.
3.0 "	1¼" opened	.90 per lb.
3.0 "	2" opened	.90 per lb.
3.0 "	2" unopened	.80 per lb.
5.5 "	1" opened	.90 per lb.
5.5 "	3½" opened	.90 per lb.
5.5 "	3½" unopened	.80 per lb.

Terms: Net 30 days.

PROTEIN

Virginia-Carolina Chemical Corp.

Fiber Division
Effective January 15, 1951

"Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.00 per lb.	$1.05 per lb.
5 Denier	1.00 per lb.	1.05 per lb.
7 Denier	1.00 per lb.	1.05 per lb.

Bleached "Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.10 per lb.	$1.15 per lb.
5 Denier	1.10 per lb.	1.15 per lb.
7 Denier	1.10 per lb.	1.15 per lb.

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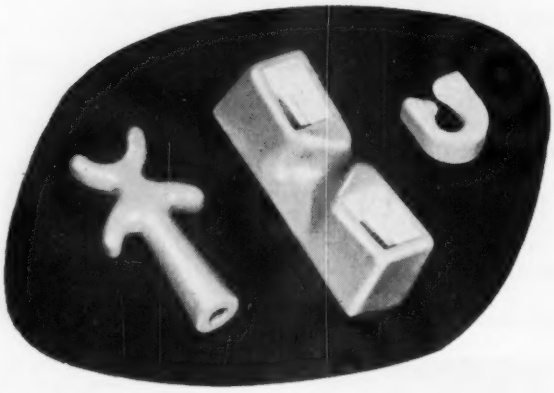

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Calendar of Coming Events

May 1-2—The Fiber Society, Spring meeting. Clemson House, Clemson, S. C.
May 1-3—Cotton Manufacturers Association of Georgia annual convention, Nassau, Bahamas.
May 4—Alabama Textile Operating Executives spring meeting. Auburn, Ala.
May 8—AATT monthly meeting. Vanderbilt Hotel, New York, N. Y.
May 9-11—North Carolina Industrial Safety Conference. Robert E. Lee Hotel, Winston-Salem, N. C.
May 10—AATCC Northern New England Section. Lowell Tech. Inst., Lowell, Mass.
May 16-18—Carolina Yarn Association annual outing. The Carolina, Pinehurst, N. C.
May 17—AATCC Hudson-Mohawk Section. Schuyler Meadows, Albany, N. Y.
May 17—AATCC Western New England Section. Waverly Inn, Cheshire, Conn.
May 20-25—National Cotton Week
May 22-24—American Society for Quality Control annual convention. Masonic Temple, Detroit, Mich.
May 28-29—Market Research Conference sponsored by National Cotton Council. Washington, D. C.
May 30-Jun. 1—Tufted Textile Manufacturers Association annual convention. Fontainebleau, Miami Beach, Fla.
May 30-Jun. 1—South Carolina Textile Manufacturers Association annual meeting. The Cloisters, Sea Island, Ga.
Jun. 5—AATT monthly meeting. Hotel Vanderbilt, New York, N .Y.
Jun. 7-9—AATCC Piedmont Section annual outing. Mayview Manor, Blowing Rock, N. C.
Jun. 16-21—ASTM 60th annual meeting. Chalfonte-Haddon Hall, Atlantic City, N. J.
Jun. 20-22—Southern Textile Association annual convention. Ocean Forest Hotel, Myrtle Beach, S. C.

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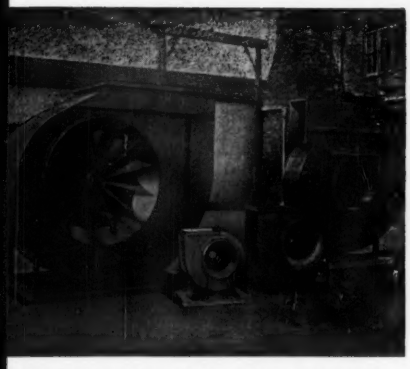

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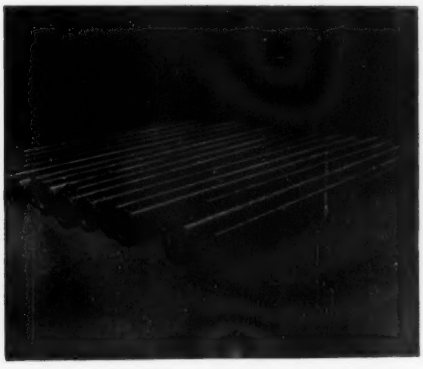

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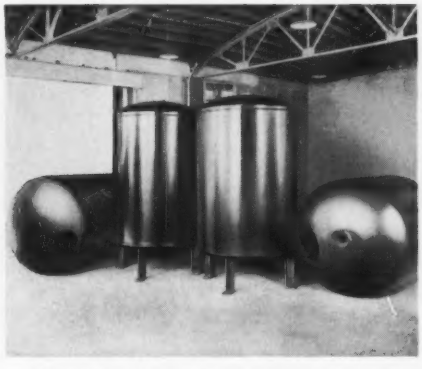

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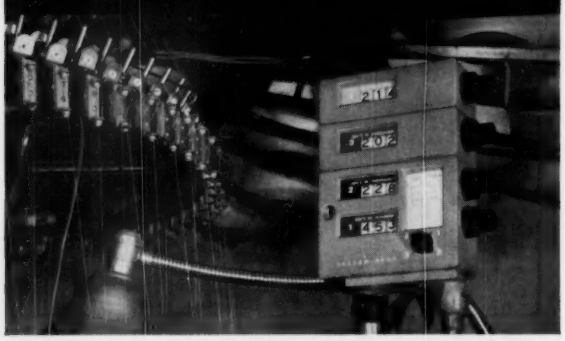
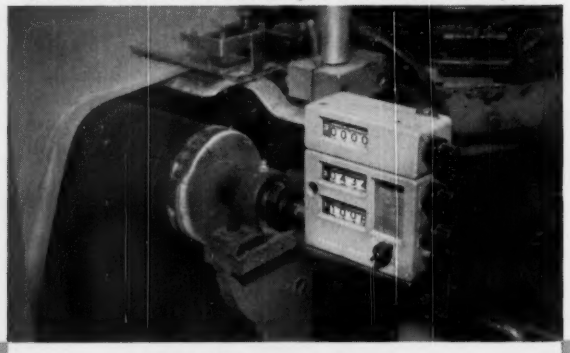


3-Shift Revolution Counter on Knitting Machine at Lawrence Mfg. Co.



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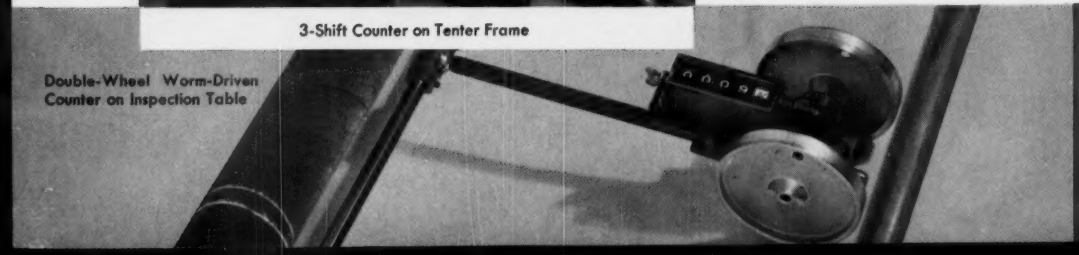

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